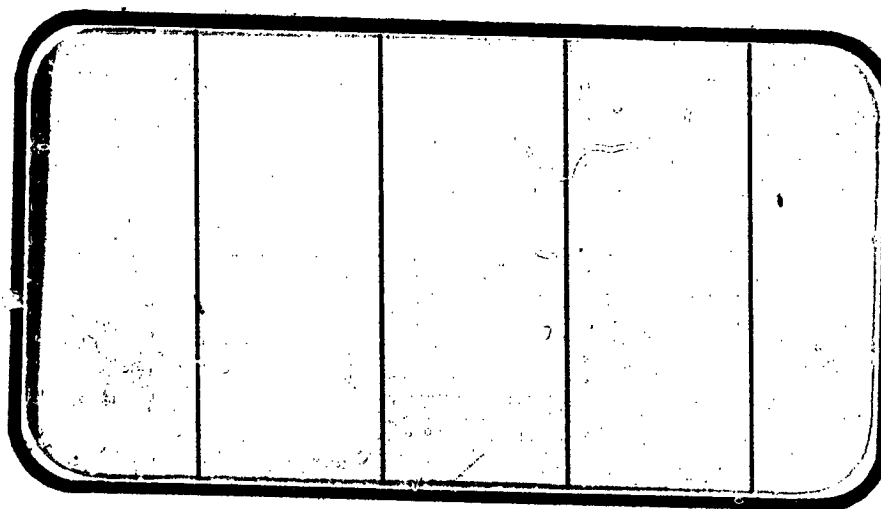


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SPACE DIVISION

CHRYSLER CORPORATION

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VOLUME 2 OF 13

TERMINAL AREA ENERGY MANAGEMENT
REGIME INVESTIGATIONS UTILIZING AN 0.030-SCALE
MODEL (47-0) OF THE SPACE SHUTTLE VEHICLE
ORBITER CONFIGURATION 140A/B/C/R IN THE
AMES RESEARCH CENTER 11 X 11 FOOT
TRANSONIC WIND TUNNEL (0A148)

by

P. J. Hawthorne
Rockwell International Space Division

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services
Chrysler Corporation Space Division
New Orleans, La. 70189

for

Engineering Analysis Division
Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: ARC 11-073
NASA Series Number: OA148
Model Number: 47-0
Test Dates: May 5 through May 17, 1975
Occupancy Hours: 220

FACILITY COORDINATOR:

Stuart L. Treon
Mail Stop 227-5
Ames Research Center
Moffett Field, Calif. 94035

Phone: (415) 922-5850

AERODYNAMICS ANALYSIS ENGINEERS:

S. Kraus
J. H. Reichert
Rockwell International
Space Division
12214 Lakewood Blvd.
Mail Code AC07
Downey, Calif. 90241

Phone: (213) 922-4831

PROJECT ENGINEERS:

P. J. Hawthorne
J. Marroquin
M. D. Milam
Rockwell International
Space Division
12214 Lakewood Blvd.
Mail Code AD38
Downey, Calif. 90241

Phone: (213) 922-3785

R. E. Ellington
J. J. Brownson
Ames Research Center
Mail Stop 227-5
Moffett Field, Calif. 94035

Phone: (415) 965-6262

DATA MANAGEMENT SERVICES:

Prepared by: Liaison--D. A. Sarver
Operations--W. B. Meinders

Reviewed by: D. E. Poucher

Approved: J. F. Kelly
L. Glynn, Manager
Data Operations

Concurrence: N. D. Kemp
N. D. Kemp, Manager
Data Management Services

Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

TERMINAL AREA ENERGY MANAGEMENT
REGIME INVESTIGATIONS UTILIZING AN 0.020-SCALE
MODEL (47-0) OF THE SPACE SHUTTLE VEHICLE
ORBITER CONFIGURATION 140A/B/C/R IN THE
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ABSTRACT

This report documents data obtained in wind tunnel test 0A148.

The objectives of the test series were to:

- 1) obtain pressure distributions, forces and moments over the vehicle 5 Orbiter in the terminal area energy management (TAEM) and approach phases of flight.
- 2) obtain elevon and rudder hinge moments in the TAEM and approach phases of flight.
- 3) obtain body flap and elevon loads for verification of loads balancing with integrated pressure distributions.
- 4) obtain pressure distributions near the short OMS pods in the high subsonic, transonic and low supersonic Mach number regimes.

Testing was conducted over a Mach number range from 0.6 to 1.4 with Reynolds number variations from 4.57×10^6 to 2.74×10^6 per foot. Model angle-of-attack was varied from -4 to 16 degrees and angles of side slip ranged from -8 to 8 degrees.

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PLOTTED COEFFICIENTS SCHEDULE:

- A) CY, CYN and CBL versus BETA
- B) CN, CA and CLM versus ALPHA
- C) CHEO, CHEI, CHETOT and CHBF versus ALPHA
- D) CP versus X/L6
- E) CP versus X/CW
- F) CP versus X/CV

NOMENCLATURE

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
A_b	AB	total Orbiter base area, ft^2
A_i	AI	area over which P_i acts, ft^2
A_{sb}	ASB	speed brake base area, ft^2
b	BREF, BW	Orbiter wing span, in
b_v	BV	vertical tail reference span, in
C_{A_u}	CAU	Orbiter uncorrected axial force coefficient
C_A	CA	Orbiter axial force coefficient with sting cavity adjusted to average base pressure
C_{AF}	CAF	Orbiter forebody axial force coefficient.
C_{Asc}	CASC	Orbiter sting cavity axial force coefficient.
C_{D_u}	CDU	Orbiter uncorrected drag coefficient
$C_{h_{bf}}$	CHBF	body flap hinge moment coefficient, about hinge line $X_0 = 1532.0$
$C_{h_{ei}}$	CHEI	inner elevon hinge moment coefficient, about hinge line $X_0 = 1387.0$
$C_{h_{eo}}$	CHEO	outer elevon hinge moment coefficient, about hinge line $X_0 = 1387.0$
$C_{h_{eTOT}}$	CHETOT	total right elevon hinge moment coefficient
C_{L_u}	CLU	Orbiter uncorrected lift coefficient
C_l	CBL	Orbiter rolling moment coefficient, body axis system

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
C_m	CLM	Orbiter pitching moment coefficient with sting cavity adjusted to average base pressure, referenced to Orbiter MRC.
C_{m_u}	CLMU	Orbiter uncorrected pitching moment coefficient
C_{m_F}	CLMF	Orbiter forebody pitching moment coefficient referenced to orbiter MRC.
$C_{m_{sc}}$	CLMSC	Orbiter sting cavity pitching moment coefficient, referenced to Orbiter MRC
C_{N_u}	CNU	Orbiter uncorrected normal force coefficient
C_N	CN	Orbiter normal force coefficient with sting cavity adjusted to average base pressure
C_{N_F}	CNF	Orbiter forebody normal force coefficient
$C_{N_{sc}}$	CNSC	Orbiter sting cavity normal force coefficient
C_n	CYN	Orbiter yawing moment coefficient, body axis system
C_{p_i}	CPi	surface tap pressure coefficient, port i, $(P_i - P_\infty)/q$
C_y	CY	Orbiter side force coefficient
$C_{[X][Y]}$	$C[X][Y]$	base area force and moment coefficients. The first subscript (post fix) designates the type of coefficient, the second the pressure tap and it's associated area. The symbolic vectors [X] and [Y] are defined below.
<u>[X]=</u>		
A	A	axial force
N	N	normal force
Y	Y	side force
m	LM	pitching moment
n	YN	yawing moment
l	BL	rolling moment

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
<u>[Y]</u> =		
1,2,3 4,5,6 sc bf	1,2,3 4,5,6 SC BF	areas associated with pressure taps 1 through 6 see figure 2b sting cavity area upper body flap area
l_b	LB	Orbiter reference body length, IML nose to $X_0 = 1528.3$, in.
λ_{REF}	LREF	longitudinal reference length, Orbiter mean aerodynamic chord, in
	LU/DU	uncorrected lift to drag ratio, CLU/CDU
M	MACH	freestream Mach number
ϕ	PHI	angular cylindrical coordinate position around Orbiter body - deg.
P_i	Pi	pressure at surface tap i, PSF
P_∞	P	freestream static pressure, PSF
P_t	PT	freestream total pressure, PSF
q	Q	freestream dynamic pressure, PSF
	RN/L	unit Reynolds number, million per foot
S	SREF	wing reference area, ft ²
T_t	TTR	freestream total temperature, °R
x_{cp}	XCP/L	center of pressure location referred to l_b
x_0/L_0	X/LB	longitudinal location of body surface, fraction of body length

NOMENCLATURE (Concluded)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Definition</u>
X/C	X/CW	chordwise location on wing surface, fraction of local chord
X/C _v	X/CV	chordwise location on vertical tail, fraction of local chord
n _v	Z/BV	spanwise location on vertical tail, fraction of vertical tail span
n	2Y/BW	spanwise location on wing, fraction of semi span
X _{mrp}	XMRP	longitudinal location of moment reference point
X _T	XT	longitudinal moment transfer distance from Orbiter balance center to Orbiter MRC, in
Y _{mrp}	YMRP	lateral location of moment reference point
Z _T	ZT	vertical moment transfer distance from Orbiter balance center to Orbiter MRC, in
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
δ _{bf}	BDFLAP	body flap deflection, degrees
δ _{eL}	ELVN-L, L-ELVN	left elevon deflection, degrees
δ _{eR}	ELVN-R, R-ELVN	right elevon deflection, degrees
δ _r	RUDDER	rudder deflection, degrees
δ _{sb}	SPDBRK	speed brake deflection, degrees
Z _{mrp}	ZMRP	vertical location of moment reference point
	\$\$	mask character used to indicate all possible values for this test 01 through 85

REMARKS

During the course of the test it was necessary to replumb the scani-
valves. The resultant time loss necessitated deleting the priority 4 runs
which incorporated the use of the metric vertical tail.

Data obtained from pressure taps 184, 296 and 347 are suspect due to
slow leaks noticed while leak checking individual model pressure taps.

Body flap hinge moment data for datasets RE8001 through RE8005 have
a -15% drift while datasets RE8006 and RE8007 have 0% drift due to data
recording system errors. System checks during the remainder of the test
indicate a system error of less than 4% for body flap hinge moment data.

Rolling moment data has an approximate -.003 bias in the coefficient.
The reason for this was not determined, but possible sources are fabrication
tolerances and/or differential stiffness of the left and right elevon
panels.

Distortion of the instrumented elevon shaft appears to have occurred
around run 310 due to model assembly difficulties and the maximum loads en-
countered at these test conditions. A comparison of measured elevon de-
flection before and after the test with the nominal setting is presented
below:

<u>Elevon Panel</u>	<u>Nominal</u>	<u>Pre-Test</u>	<u>Post-Test</u>
Inboard right	-10	-9° 36'	-8° 55'
	-4	-3° 34'	-2° 55'
	0	+0° 10'	+1° 02'
	4	+4° 26'	+4° 28'
	10	+10° 32'	+10° 39'
Outboard right	-10	-9° 36'	-8° 15'
	-4	-3° 34'	-2° 20'
	0	+0° 10'	+1° 05'
	4	+4° 26'	+3° 59'
	10	+10° 32'	+10° 18'

* Inboard only was measured but was the same as outboard panel (see Ref 2)

CONFIGURATION INVESTIGATED

The Rockwell International model 47-0 Space Shuttle Orbiter Vehicle was utilized in this test series. The model was originally constructed to -140A/B lines, but was modified prior to this test with the addition of the -140C OMS pods, six inch bevelled interpanel elevon gaps and uncovered RCS forward thruster parts. To denote these additions, the additional designations "C" (for -140C OMS pods) and "R" (for RCS thrusters) were added, and the slashes deleted for convenience on Table II (designated "-140 ABCR").

In data sets RE8069 to 085 the RCS thruster ports in the nose were filled reverting the configuration to -140A/B/C modified with body B₂₆.

The following nomenclature denotes the model components:

<u>Component</u>	<u>Description</u>
B ₂₆	140A/B fuselage (VL70-000140A, VL70000140B)
B ₇₀	140A/B fuselage (VL70-000140A, VL70-000145, VL70-000140B, VL70-000143A, VL70-000139) with RCS thruster parts (VL70-08501, VL70-08502, VL70-08296)
C ₉	140A/B basic canopy (VL70-000140A, VL70-000143A)
E ₄₄	140A/B elevons (VL70-000200, VL70-006089, VL70-006092) with six inch bevelled interpanel gaps, no flipper door
F ₉	140A/B body flap (VL70-000140B, VL70-000200)
M ₁₆	OMS-RCS pods for 140C Orbiter
N ₂₈	OMS basic nozzles
R ₅	basic Orbiter rudder (VL70-000146A, VL70-000095)
V ₈	basic Orbiter vertical tail (VL70-00014CA, VL70-000146A)
W ₁₁₆	basic 140A/B wing (VL70-000140B, VL70-000200)

CONFIGURATIONS INVESTIGATED (Concluded)

Designated configurations are:

-140ABCR \equiv B₇₀ C₉ E₄₄ F₉ M₁₆ N₂₈ R₅ V₈ W₁₁₆

-140 ABC \equiv B₂₆ C₉ E₄₄ F₉ M₁₆ N₂₈ R₅ V₈ W₁₁₆

TEST FACILITY DESCRIPTION

The Ames Research Center Unitary Plan 11- by 11-Foot Transonic Wind Tunnel is a closed-circuit, air-medium, variable-density facility capable of attaining Mach numbers from 0.6 to 1.4 at Reynolds numbers from $1.7 \times 10^6/\text{ft}$ to $9.4 \times 10^6/\text{ft}$. The test section is 22 feet long, and models are installed on internal strain-gauge balances mounted on sting-type support systems.

Shadowgraph and Schlieren photographic equipment is available, and pressure transducer instrumentation is provided.

Tunnel operating temperature is 580°R. Extended high Reynolds number runs are restricted by power availability.

DATA REDUCTION

Standard NASA/Ames data reduction equations were used to reduce forces, moments, and pressures to coefficient form. Orbiter main balance force and moment coefficients were computed using the following equations:

<u>Symbol</u>	<u>Orbiter main balance measurement</u>
NF	Normal Force
AF	Axial Force
PM	Pitching Moment
YM	Yawing Moment
SF	Side Force
RM	Rolling Moment

$$C_{A_u} = AF / (q S)$$

$$C_{N_u} = NF / (q S)$$

$$C_Y = SF / (q S)$$

$$C_{L_u} = C_{N_u} \cos \alpha - C_{A_u} \sin \alpha$$

$$C_{D_u} = C_{N_u} \sin \alpha + C_{A_u} \cos \alpha$$

$$C_{m_u} = \frac{PM}{q S c} + \frac{C_A \cdot Z_T}{c} - \frac{C_N \cdot X_T}{c}$$

$$C_{\ell} = \frac{RM}{q S b} + \frac{C_Y \cdot Z_T}{b}$$

$$C_n = \frac{YM}{q S b} - \frac{C_Y \cdot X_T}{b}$$

Moment Transfer Distances

$$X_T = 0.572 \text{ in.}$$

$$Y_T = 0$$

$$Z_T = 0.450 \text{ in.}$$

The Moment Reference Center about which the data was reduced is located at

Orbiter (Full Scale)

X_0	1076.68
Y_0	0
Z_0	375.00

Balance coefficients were grouped into datasets RE80\$\$.

DATA REDUCTION (Continued)

Hinge moments and hinge moment coefficients were computed using the following equations:

Elevon hinge moments (inboard and outboard).

$$HM_{eI} = (HM1 - HM2) (M1/D1) + HM1$$

$$HM_{eO} = (HM3 - HM4) (M3/D3) + HM3$$

where

HM_i = measured moment on strain gage i

D1 = distance between gages 1 and 2, .49335 in.

D3 = distance between gages 3 and 4, .45800 in.

M1 = moment transfer distance for inboard elevon, .93825 in.

M3 = moment transfer distance for outboard elevon, .92250 in.

Elevon hinge moment coefficients

$$\text{Inboard, } C_{HeI} = HM_{eI} / (q S_e c_e)$$

$$\text{Outboard, } C_{HeO} = HM_{eO} / (q S_e c_e)$$

$$\text{Total, } C_{HeTOT} = C_{HeI} + C_{HeO}$$

S_e = elevon reference area, 0.189 ft.²

c_e = elevon reference MAC, 2.721 in.

Body flap hinge moment coefficient

$$C_{Hbf} = HM_{bf} / (q S_{bf} c_{bf})$$

HM_{bf} = measured body flap hinge moment

S_{bf} = body flap reference area, 0.12834 ft.²

DATA REDUCTION (Continued)

c_{bf} = body flap reference MAC, 2.541 in.

Hinge moment coefficients are part of datasets RE8X\$\$.

Pressure coefficients for all model orifice pressure measurements were computed using this equation:

$$C_{p_i} = (P_i - P_\infty)/q$$

where P_i = pressure at model orifice i

P_∞ = tunnel static pressure

q = tunnel dynamic pressure

Other data reduction constants include:

S = wing reference area, 2.4210 ft.²

c = wing reference chord, 14.2443 in.

b = wing reference span, 28.1004 in.

After the data had been reduced to coefficient form by NASA/AMES, DMS interpolated it to nominal α 's and β 's. Then 2 types of base and sting cavity area coefficients were calculated. When they are applied 3 types of balance coefficient data exists. These can be distinguished by the last subscript (symbolic name) or postfix (mnemonic name). The key is given below

U ~ uncorrected coefficients.

~ coefficients with sting cavity pressure corrected to base pressure (without a suffix).

F ~ forebody coefficients with the base area pressure corrected to freestream pressure.

DATA REDUCTION (Continued)

Only the correction coefficients associated with base pressure tapes 1 through 4 were applied to the longitudinal orbiter coefficients.

Figure 2b illustrates the base area associated with each pressure tap. Alphabetic characters bf and sc designate body flap and sting cavity areas, respectively. Base area coefficient names have a numeric character which designates the pressure tap number. Base coefficients for vertical tail areas 5 and 6 were calculated but not applied to the total orbiter coefficients. Base area coefficient values are tabulated in the appendix. A detailed derivation of these coefficients follows. It is concluded by a matrix of base area geometric properties.

The orbiter sting cavity force and moment coefficients were computed as:

$$C_{A_{sc}} = \frac{(C_{p2} - C_{p1}) A_1}{S}$$

$$C_{N_{sc}} = \frac{(C_{p2} - C_{p1}) A_1 \tan 12.55^\circ}{S}$$

$$C_{m_{sc}} = C_{A_{sc}} \frac{Z_t}{c} - C_{N_{sc}} \frac{x_{sc}}{c}$$

The orbiter force and moment coefficients corrected for the difference between balance cavity pressure and orbiter base pressure:

$$C_A = C_{A_u} - C_{A_{sc}}$$

$$C_N = C_{N_u} - C_{N_{sc}}$$

$$C_m = C_{m_u} - C_{m_{sc}}$$

These orbiter coefficients are part of datasets KE80\$\$.

DATA REDUCTION (Continued)

Orbiter base force and moment coefficients were calculated as follows:

Upper base area

$$C_{N2u} = -(C_{p2} A_{2u} \tan 16^\circ)/S$$

$$C_{A2u} = -(C_{p2} A_{2u})/S$$

$$C_{m2u} = \frac{C_{A2u} Z_{2u}}{c} - \frac{C_{N2u} X_{2u}}{c}$$

Lower base area

$$C_{N2l} = -(C_{p2} A_{2l} \tan 10^\circ)/S$$

$$C_{A2l} = -(C_{p2} A_{2l})/S$$

$$C_{m2l} = C_{A2l} \frac{Z_{2l}}{c} - C_{N2l} \frac{X_{2l}}{c}$$

Total base area, A_2

$$C_{N2} = C_{N2u} + C_{N2l}$$

$$C_{A2} = C_{A2u} + C_{A2l}$$

$$C_{m2} = C_{m2u} + C_{m2l}$$

OMS pod base area, A_3

(This assumes the surface is perpendicular to the orbiter X-axis)

$$C_{A3} = -(C_{p3} A_3)/S$$

$$C_{m3} = C_{A3} \frac{Z_3}{c}$$

OMS pod base area, A_4

(This assumes the surface is perpendicular to the orbiter X-axis)

DATA REDUCTION (Continued)

$$C_{A4} = -(C_{p4} A_4)/S$$

$$C_{m4} = C_{A4} \frac{Z_4}{c}$$

Coefficients for the above areas are grouped into datasets EE8D\$\$.

Upper surface of body flap

$$C_{A_{bf}} = \frac{-C_{p_{bf}} A_{bf}}{S} \sin (\delta_{bf} + 6.88^\circ)$$

$$C_{N_{bf}} = \frac{-C_{p_{bf}} A_{bf}}{S} \cos (\delta_{bf} + 6.88^\circ)$$

$$C_{m_{bf}} = \frac{C_{A_{bf}} Z_{bf}}{c} - \frac{C_{N_{bf}} X_{bf}}{c}$$

where:

$$C_{p_{bf}} = \frac{C_{p200} + C_{p201} + C_{p204} + C_{p205}}{4}$$

The orbiter force and moment coefficients adjusted to free stream pressure (forebody coefficients).

$$C_{A_F} = C_{A_u} - \left(\frac{-C_{p1} A_1}{S} + \sum_{i=2}^4 C_{A_i} + C_{A_{bf}} \right)$$

$$C_{N_F} = C_{N_u} - (C_{N2} + C_{N_{bf}})$$

$$C_{m_F} = C_{m_u} - \left(\sum_{i=2}^4 C_{m_i} + C_{m_{bf}} \right)$$

These orbiter coefficients are part of datasets KE80\$\$.

Vertical tail "undercarriage" area, A_5

Top Segment:

$$C_{N5t} = (C_{p5} A_{5t} \tan 63.75^\circ)/S$$

DATA REDUCTION (Continued)

$$C_{A5t} = - (C_{p5} A_{5t})/S$$

$$C_{m5t} = C_{A5t} \frac{Z_{5t}}{c} - C_{N5t} \frac{X_{5t}}{c}$$

Middle Segment:

$$C_{N5m} = (C_{p5} A_{5m} \tan 26.1426^\circ)/S$$

$$C_{A5m} = - (C_{p5} A_{5m})/S$$

$$C_{m5m} = C_{A5m} \frac{Z_{5m}}{c} - C_{N5m} \frac{X_{5m}}{c}$$

Bottom Segment:

$$C_{N5b} = (C_{p5} A_{5b} \tan 21.94^\circ)/S$$

$$C_{A5b} = - (C_{p5} A_{5b})/S$$

$$C_{m5b} = C_{A5b} \frac{Z_{5b}}{c} - C_{N5b} \frac{X_{5b}}{c}$$

Total area, A_5 :

$$C_{N5} = C_{N5t} + C_{N5m} + C_{N5b}$$

$$C_{A5} = C_{A5t} + C_{A5m} + C_{A5b}$$

$$C_{m5} = C_{m5t} + C_{m5m} + C_{m5b}$$

Vertical Tail base area, A_6 :

Segment above rudder

$$C_{N6u} = (C_{p6} A_{6u} \tan 63.75^\circ)/S$$

$$C_{A6u} = (C_{p6} A_{6u})/S$$

$$C_{m6u} = C_{A6u} \frac{Z_{6u}}{c} - C_{N6u} \frac{X_{6u}}{c}$$

DATA REDUCTION (Continued)

Rudder/Speed brake base:

$$C_{A6_l} = C_{p6} A_{6_l} [\sin (\theta - 55.1667^\circ) \cos 55.1667^\circ + \cos (\theta - 55.1667^\circ) \sin 55.1667^\circ \cos (\delta r)]/S$$

$$C_{N6_l} = C_{p6} A_{6_l} [\sin (\theta - 55.1667^\circ) \sin 55.1667^\circ - \cos (\theta - 55.1667^\circ) \cos 55.1667^\circ \cos (\delta r)]/S$$

$$C_{Y6_l} = C_{p6} A_{6_l} \cos (\theta - 55.1667^\circ) \sin \delta r/S$$

$$C_{m6_l} = [C_{A6_l} (Z_{6_l}) - C_{N6_l} (X_{6_l})]/c$$

$$C_{L6_l} = [C_{Y6_l} (Z_{6_l})]/b$$

$$C_{n6_l} = -[C_{Y6_l} (X_{6_l})]/b$$

$$\theta = \tan^{-1} \left[\frac{5.456791 + .573209 \cos \left(\frac{\delta_{SB}}{2} \right)}{3.797715 - .823715 \cos \left(\frac{\delta_{SB}}{2} \right)} \right]$$

$$A_{6_l} = A_{6_l} / \sin \theta$$

Total area, A_6 :

$$C_{A6} = C_{A6u} + C_{A6l}$$

$$C_{N6} = C_{N6u} + C_{N6l}$$

$$C_{Y6} = C_{Y6l}$$

$$C_{m6} = C_{m6u} + C_{m6l}$$

$$C_{L6} = C_{L6l}$$

$$C_{n6} = C_{n6l}$$

Vertical tail area coefficient data are grouped into datasets GE8D\$\$.

DATA REDUCTION (Continued)

BASE GEOMETRIC PROPERTIES MATRIX

Description	Sub-script	Area A - ft. ²	Distance between Centroid and MRC	
			vertical Z - in.	longitudinal X - in.
Sting cavity	sc	0.076699	0.45	12.199
Body flap upper surface	sf	0.128	- 2.64	13.659
Orbiter balance cavity	1	0.076699	0.45	12.199
Orbiter base orifice 2 lower	2l	0.133889	- 1.32	12.617
Orbiter base orifice 2 upper	2u	0.0818055	2.07	12.384
Lower OMS pod	3	0.030472	2.68	NA
Upper OMS pod	4	0.074166	3.63	NA
Vertical tail "undercarriage" bottom	5b	0.003565	4.612	12.395
Vertical tail "undercarriage" middle	5m	0.002610	5.336	14.079
Vertical tail "undercarriage" top	5t	0.000341	5.97	15.185
Vertical tail above rudder	6u	0.000798	12.656	18.482
Base area of speed brake	6s	Varies with speed brake deflection		

NOTES: Sting cavity and Orbiter balance cavity are synonymous.

NA - not applicable.

DATA REDUCTION (Continued)

δ_{sb}	A_{6L} ft ²
0	0.0066036
25	0.0456000
35	0.0621000
55	0.0950800
85	0.1551400

$$X_{6L} = 15.045 + 1.442277 [1 - \cos (\delta_{sb}/2)]$$

$$Z_{6L} = 9.755 + 0.501827 [1 - \cos (\delta_{sb}/2)]$$

Standard DMS loads cycle test procedures were used to process the OA148 pressure data. First numerous pressure distribution plots were released. Analysis of these produced bad pressure data list. This list is reproduced below:

DATA REDUCTION (Continued)

0A148 Bad Pressure Data

<u>Component</u>	<u>Dataset No.</u>	<u>Tap No.</u>	<u>B</u>	<u>a</u>
Fuselage (B)	1	143	4	-4
	1	148	4	-4
	1	150	4	-4
	1	152	4	-4
	1	186	4	-4
	1	187	4	-4
	1	189	4	-4
	1	191	4	-4
	1	193	4	-4
Lower Wing (L)	1 → 7	231	ALL	ALL
	1 → 85	290	ALL	ALL
	1	316	4	-4
	1	317	4	-4
	1	337	4	-4
	1	338	4	-4
	1	358	4	-4
	1	378	4	-4
	1	379	4	-4
	1	398	4	-4
Upper Wing (U)	1 → 7	247	ALL	ALL
	1	357	4	-4
Body Flap (F)	24	205	-4	12
Speed Brake (K)	1 → 85	822	ALL	ALL
Vertical Tail (V)	8	443	ALL	ALL
	ALL	1444	ALL	ALL
	79	1453	-4	-4
	79	1454	-4	-4

Note: Wind tunnel pressure data tabulated in the appendix have the original bad data values.

DATA REDUCTION (Continued)

These points were eliminated from further processing. The remaining data were interpolated to nominal alpha and beta values. Processing was completed with the release of a magnetic tape containing the final interpolated pressure coefficients.

This report contains plots and tabular listings for both force and pressure data. Plotted force data illustrates lateral-directional, longitudinal and hinge moment characteristics of the configuration tested. Plotted pressure data illustrates the effect of several control deflections and attitude changes on local pressure distributions. The multiple volume appendix contains a tabulated listing of the basic force and pressure data. Listing of the interpolated base area coefficients is also included. The plotted and tabulated data are arranged in the following manner:

VOLUME NO.

CONTENTS

- | | |
|---|--|
| 1 | Force data plots showing lateral-directional longitudinal and hinge moment characteristics. |
| 2 | Plots illustrating the effect of control surface deflections on fuselage, wing and vertical tail pressure distributions. |

DATA REDUCTION (Concluded)

VOLUME
NO.

CONTENTS

3

Tabulated Force Data

<u>Dataset</u>	<u>Data type</u>
RE80\$\$	source balance coefficients
RE8X\$\$	source hinge moment coefficients
RE8Y\$\$	source base pressure coefficients
KE80\$\$	interpolated balance coefficients adjusted for cavity pressure and forebody coefficients
EE8D\$\$ FE8D\$\$	interpolated base and cavity area coefficients
GE8D\$\$	interpolated vertical tail base area coefficients

Tabulated Pressure Data

	<u>Component</u>	<u>Fourth Character*</u>	<u>Page</u>
4, 5	orbiter fuselage	B	1
6,7,8	lower wing	L	1271
9,10,11	upper wing	U	3147
12	upper body flap	F	5405
12	lower body flap	G	5774
13	speed brake	K	6143
13	vertical tail	V	6547

* The fourth character in each dataset identifier (i.e., XE8BXX, B for Fuselage) represents the individual component.

REFERENCES

1. SD75-SH-0106, "Pretest Information for OA148 of the 0.03-Scale 47-0 Pressure Loads Space Shuttle Model in the 11 x 11 Foot Leg of the NASA/ARC Unitary Plan Wind Tunnel," April 18, 1975.
2. MG-75-07-11, Rockwell International Corporation Internal Letter: "Model design Dimensional Varification Task 36: Elevon Deflection Angle Check of the 0.03-Scale SSV Model 47-0 (140A/B Configuration)". SAS/WTO/ -283, July 29, 1975.

TABLE I

[illegible]

ARC 11-073

TABLE II.

TEST: OA 148		DATA SET/RUN NUMBER COLLATION SUMMARY												DATE: 28 SEP 76	
DATA SET IDENTIFIER	CONFIGURATION	TEST RUN NUMBER												MACH NUMBERS	
		01	02	03	04	05	06	07	08	09	10	11	12		
001	-140 ABCR	B	D	0	55	163	0	0	32	33	34	35	58	59	1.4
002		A	D						38	39	40	41	42		1.25
003		A	D						43	44	45	46	47		1.1
004		A	D						48	49	50	51	52		0.9
005		A	C						53	54	55	56	57		0.6
006	-140 ABCR	A	C	0	55	225	0	0	60	61	62	63	64		0.6
007		A	D						65	68	67	69	70		0.9
008	-140 ABCR	B	D	0	85	225	0	0	71	72	73	74	75	76	1.4
009		A	D						77	78	79	80	81		1.25
010		A	D						82	83	84	85	86		1.1
011		A	D						87	88	89	90	91		0.9
012		A	C						92	93	94	95	96		0.6

G OR B SCHEDULES	COEFFICIENTS											
	7	13	19	25	31	37	43	49	55	61	67	73
AX = -4, 0, 4, 8, 12												
BX = -4, 0, 4, 8, 12, 16												
CX = -8, -4, 0, 4, 8												
DX = -4, 0, 4												

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TABLE II - Continued.

TEST: OA 148		DATA SET RUN NUMBER COLLATION SUMMARY												DATE: POST TEST	
DATA SET IDENTIFIER	CONFIGURATION	α												MACH NUMBERS	
		α	β	δ	ϵ	ζ	η	θ	ι	κ	λ	μ	ν	ξ	\omicron
RE8013	-140 ABCR	B	D	0	35	0	0	0	97	98	99	100	101	102	1.4
014		A	D						103	104	105	106	107		1.25
015		A	D						108	109	110	111	112		1.1
016		A	D						113	114	115	116	117		0.9
017		A	C						118	119	120	121	122		0.6
018	-140 ABCR	B	D	0	0	-117	0	0	123	124	125	126	127	128	1.4
019		A	D						131	132	133	134	135	136	1.25
020		A	D						137	138	139	140	141	142	1.1
021		A	D						143	144	145	146	147	148	0.9
022		A	C												0.6
023	-140 ABCR	B	D	0	0	0	0	0	149	150	151	152	153	154	1.4
024		A	D						155	156	157	158	159		1.25
025		A	D						160	161	162	163	164		1.1
026		A	D						165	166	167	168	169		0.9
027		A	C						170	171	172	173	174		0.6
		COEFFICIENTS												TEST RUN NUMBER	
		7	13	19	25	31	37	43	49	55	61	67	73	79	
														10VAR (1)	
														10VAR (2)	
														NDV	
a or b SCHEDULES														NASA-MSFC-MAF	

TABLE II. - Continued.

TEST: 0A 14B		DATA SET/RUN NUMBER COLLATION SUMMARY												DATE: Post Test		
DATA SET IDENTIFIER	CONFIGURATION	α												MACH NUMBERS		
		α	B	S	S	S	S	S	S	S	S	S	S			
RE8018	140 ABCR	B	D	-W	35	163	10	0	175	176	177	178	179	180	1.4	
029		A	D						181	182	183	184	185		1.25	
030		A	D						186	187	188	189	190		1.1	
031		A	D						191	192	193	194	195		0.9	
032		A	C						196	197	198	199	200		0.6	
033	140 ABCR	B	D	+10	35	163	0	10	201	202	203	204	205	206	1.4	
034		A	D						207	208	209	210	211		1.25	
035		A	D						212	213	214	215	216		1.1	
036		A	D						217	218	219	220	221		0.9	
037		A	C						222	223	224	225	226		0.6	
038	140 ABCR	B	D	+10	85	163	10	10	227	228	229	230	231	232	1.4	
039		A	D						233	234	235	236	237		1.25	
040		A	D						238	239	240	241	242		1.1	
041		A	D						243	244	245	246	247		0.9	
042		A	C						248	249	250	251	252		0.6	
		7	13	19	25	31	37	43	49	55	61	67	73	79		
		COEFFICIENTS												IDVAR (1)	IDVAR (2)	IDV
		SCHEDULES														

TABLE II. - Continued.

TEST: OA 148		DATA SET RUN NUMBER COLLATION SUMMARY												DATE: Post TEST	
DATA SET IDENTIFIER	CONFIGURATION	TEST RUN NUMBER												MACH NUMBERS	
		1	2	3	4	5	6	7	8	9	10	11	12		
2E8043	140 ABCR	A	D	0	55	225	10	10	253	254	255	256	257	0.9	
044		A	C						258	259	260	261	262	0.6	
045	140 ABCR	A	D	0	55	225	4	4	263	264	265	266	267	0.9	
046		A	C						268	269	270	271	272	0.6	
047	140 ABCR	B	D	-10	85	163	4	4	273	274	275	276	277	1.4	
048		A	D						279	280	281	282	283	1.25	
049		A	D						284	285	286	287	288	1.1	
050		A	D						289	290	291	292	293	0.9	
051		A	C						294	295	296	297	298	0.6	
052	140 ABCR	B	D	-10	55	163	4	4	299	300	301	302	303	1.4	
053		A	D						305	306	307	308	309	1.25	
054		A	D						310	311	312	313	314	1.1	
055		A	D						315	316	317	318	319	0.9	
056		A	C						320	321	322	323	324	0.6	

TABLE II. - Continued.

TEST: OA 148		DATA SET/RUN NUMBER COLLATION SUMMARY												DATE: POST TEST		
DATA SET IDENTIFIER	CONFIGURATION	X												MACH NUMBERS		
		A	B	SR	SSB	SEF	SEL	SEC	-A	0	4	8	12	16		
REB057	-140 ABCR	B	D	10	65	163	A	-A	325	326	327	328	329	330	1.4	
058		A	D						331	332	333	334	335		1.25	
059		A	D						336	337	338	339	340		1.1	
060		A	D						340	342	343	344	345		0.9	
061		A	C						346	347	348	349	350		0.6	
062	-140 ABCR	B	D	+5	55	163	-A	-A	351	352	353	354	355	356	1.4	
063		A	D						357	358	359	360	361		1.25	
064		A	D						362	363	364	365	366		1.1	
065		A	D						367	368	369	370	371		0.9	
066		A	C						372	373	374	375	376		0.6	
067	-140 ABCR	A	D	0	55	225	-A	-A	377	378	379	380	381		0.9	
068		A	C						382	383	384	385	386		0.6	
069	-140 ABC	A	D	0	55	225	-10	-10	387	388	389	390	391		0.9	
070		A	C						392	393	394	395	396		0.6	
TEST RUN NUMBER:																
COEFFICIENTS																
IDVAR (1) IDVAR (2) NDV																
G OR B SCHEDULES																

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TABLE II. - Concluded.

TEST: 0A148		DATA SET/RUN NUMBER COLLATION SUMMARY										DATE: POST TEST	
DATA SET IDENTIFIER	CONFIGURATION	X										MACH NUMBERS	
		X	B	S	S	S	S	S	S	S	S		
071	-140 ABC	B	D	A	A	A	A	A	A	A	A	1.4	
072		A	D	A	A	A	A	A	A	A	A	1.25	
073		A	D	A	A	A	A	A	A	A	A	1.1	
074		A	D	A	A	A	A	A	A	A	A	0.9	
075		A	C	A	A	A	A	A	A	A	A	0.6	
076	-140 ABC	B	D	A	A	A	A	A	A	A	A	1.4	
077		A	D	A	A	A	A	A	A	A	A	1.25	
078		A	D	A	A	A	A	A	A	A	A	1.1	
079		A	D	A	A	A	A	A	A	A	A	0.9	
080		A	C	A	A	A	A	A	A	A	A	0.6	
081	-140 ABC	B	E	I	O	A	S	I	A	S	I	1.4	
082		A	E	I	O	A	S	I	A	S	I	1.25	
083		A	E	I	O	A	S	I	A	S	I	1.1	
084		A	F	I	O	A	S	I	A	S	I	0.9	
085		A	O	I	O	A	S	I	A	S	I	0.6	

7	13	19	25	31	37	43	49	55	61	67	73
COEFFICIENTS											
OR 8											
SCHEDULES											
$F_p = 0.0$											
$\alpha = -4.0$											
$\alpha = 4.12$											
IDVAR 11											
IDVAR 12											
$F_p = 0.0$											
$\alpha = -4.0$											
$\alpha = 4.12$											
NASA-MSC-MAF											

TABLE III
MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY - B₂₆

GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage

NOTE: B₂₆ is identical to B₂₄, except underside of fuselage has been
refaired to accept W₁₁₆.

MODEL SCALE: 0.030 MODEL DRAWING: SS-A00147, Release 12

DRAWING NUMBER : VL70-000143B, -000200, -000205, -006089, -000145,
VL70-000140A, -000140B

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OML: Fwd Sta. X ₀ =235), In.	1293.3	38.799
Length (IML: Fwd Sta X =238), In.	1290.3	38.709
Max Width (@ X ₀ = 1528.3), In.	264.0	7.920
Max Depth (@ X ₀ = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - Ft ²		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

TABLE III (Continued)

MODEL COMPONENT : BODY - B₇₀GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage with forward fuselage RCS thruster ports, otherwise B₇₀ is identical to B₂₆.MODEL SCALE: 0.030DRAWING NUMBER : VL70-000140A, -000140B, -000143B, -000145, -000200, VL70-000205, -006089, -008501, -008502, -008296

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OML: Fwd Sta X ₀ =235), In.	1293.3	38.799
Length (IML: Fwd Sta X ₀ =238), In.	1290.3	38.709
Max Width (@ X ₀ = 1528.3), In.	264.0	7.920
Max Depth (@ X ₀ = 1464), In.	250.0	7.500
Fineness Ratio	0.264	0.264
Area - Ft ²		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT : CANOPY - C₉GENERAL DESCRIPTION : Configuration 3A. Canopy used with fuselage
B₂₆.MODEL SCALE: 0.030MODEL DWG: SS-A00147, Release 12DRAWING NUMBER : VL70-000143A

DIMENSIONS :

FULL SCALE

MODEL SCALE

Length ($X_0 = 434.643$ to 578), In. 143.357 4.301Max Width (@ $X_0 = 513.127$), In. 152.412 4.572Max Depth (@ $X_0 = 485.0$), In. 25.00 0.750

Fineness Ratio

Area

Max. Cross-Sectional

Planform

Wetted

Base

TABLE III (Cont'd)

MODEL COMPONENT ELEVON - E₁₁

GENERAL DESCRIPTION 6.0 in. F.S. gaps machined into E₁₁ elevon.
Flipper doors centerbody pieces, and tipseals are not simulated.
 (Data are for one of two sides.)

MODEL SCALE: 0.030

DRAWING NUMBER _____

DIMENSIONS	FULL SCALE	MODEL SCALE
Area - Ft ²	<u>210.0</u>	<u>0.189</u>
Span (equivalent) , In.	<u>349.2</u>	<u>10.476</u>
Inb'd equivalent chord, In.	<u>118.0</u>	<u>3.54</u>
Outb'd equivalent chord , In.	<u>55.19</u>	<u>1.656</u>
Ratio movable surface chord/ total surface chord	<u> </u>	<u> </u>
At Inb'd equiv. chord	<u>0.2096</u>	<u>0.2096</u>
At Outb'd equiv. chord	<u>0.4004</u>	<u>0.4004</u>
Sweep Back Angles, degrees	<u> </u>	<u> </u>
Leading Edge	<u>0.00</u>	<u>0.00</u>
Trailing Edge	<u>- 10.056</u>	<u>- 10.056</u>
Hingeline	<u>0.0</u>	<u>0.0</u>
(Product of Area & \bar{c}) ₃	<u> </u>	<u> </u>
Area Moment (about hingeline) , Ft ³	<u>1587.25</u>	<u>0.0429</u>
Mean Aerodynamic Chord, In.	<u>90.7</u>	<u>2.721</u>

TABLE III (Cont'd)

MODEL COMPONENT : BODY FLAP - F₀

GENERAL DESCRIPTION : Configuration 140A/B

MODEL SCALE: 0.030

DRAWING NUMBER : VL70-000140B, -000200

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (Chord), In.	<u>84.7</u>	<u>2.541</u>
Max Width , In.	<u>262.308</u>	<u>7.869</u>
Max Depth , In.	<u>23.00</u>	<u>0.690</u>
Fineness Ratio	<u> </u>	<u> </u>
Area - Ft ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u>142.60</u>	<u>0.128</u>
Wetted	<u> </u>	<u> </u>
Base	<u>41.90</u>	<u>0.0377</u>

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TABLE III (Cont'd)

MODEL COMPONENT : OMS POD - M₁₄

GENERAL DESCRIPTION : Configuration 140C orbiter OMS pod - short pod.
External contour is to referenced drawings with 1/2" added to simulate
TPS.

MODEL SCALE: 0.015

DRAWING NUMBER : VI70-008401, -008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta $X_0 = 1310.5$), In.	<u>258.50</u>	<u>7.755</u>
Max Width (@ $X_0 = 1511$), In.	<u>136.8</u>	<u>4.104</u>
Max Depth (@ $X_0 = 1511$), In.	<u>74.70</u>	<u>2.241</u>
Fineness Ratio	<u>2.484</u>	<u>2.484</u>
Area - Ft ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u>58.865</u>	<u>0.053</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III (Cont'd)

MODEL COMPONENT: ~~OMS~~ ^{OMS} NOZZLES - N₂₈

GENERAL DESCRIPTION: Configuration 140A/B orbiter OMS nozzles.

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000140A (Location), SS-A00136, Release 9 (Contour)

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane		
Throat to Exit Plane		
Diameter - In.		
Exit		
Throat		
Inlet		
Area - ft ²		
Exit		
Throat		
Gimbal Point (Station) - In.		
Left Nozzle		
X ₀	1518.0	45.54
Y ₀	- 88.0	- 2.64
Z ₀	492.	14.76
Right Nozzles		
X ₀	1518.0	45.54
Y ₀	88.0	2.64
Z ₀	492.0	14.76
Null Position - Deg.		
Left Nozzle		
Pitch	15°49'	15°49'
Yaw	12°17'	12°17'
Right Nozzle		
Pitch	15°49'	15°49'
Yaw	12°17'	12°17'

TABLE III (Cont'd)

MODEL COMPONENT RUDDER - R_c

GENERAL DESCRIPTION Configuration 140C orbiter rudder (identical to configuration 140A/B rudder),

MODEL SCALE: 0.030

DRAWING NUMBER VL70-000146B, -000095

DIMENSIONS	FULL SCALE	MODEL SCALE
Area - Ft ²	<u>100.15</u>	<u>0.090</u>
Span (equivalent), In.	<u>201.00</u>	<u>6.030</u>
Inb'd equivalent chord, In.	<u>91.585</u>	<u>2.748</u>
Outb'd equivalent chord, In.	<u>50.833</u>	<u>1.525</u>
Ratio movable surface chord/ total surface chord	<u> </u>	<u> </u>
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees	<u> </u>	<u> </u>
Leading Edge	<u>34.83</u>	<u>34.83</u>
Trailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
(Product of area & c)		
Area Moment (Mean Aerodynamic Chord), Ft ³	<u>610.92</u>	<u>0.0165</u>
Mean Aerodynamic Chord, In.	<u>73.2</u>	<u>2.196</u>

TABLE III (Cont'd)

MODEL COMPONENT: VERTICAL - V₈GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail.(Identical to configuration 140A/B vertical tail.)MODEL SCALE: 0.030DRAWING NUMBER: VL70-000140C, -000146B

DIMENSIONS:

FULL SCALEMODEL SCALE

TOTAL DATA

Area (Theo) - Ft²

Planform

413.2530.372

Span (Theo) - In.

315.729.472

Aspect Ratio

1.6751.675

Rate of Taper

0.5070.507

Taper Ratio

0.4040.404

Sweep-Back Angles, Degrees.

Leading Edge

45.00045.000

Trailing Edge

26.2526.25

0.25 Element Line

41.1341.13

Chords:

Root (Theo) WP

268.508.055

Tip (Theo) WP

108.473.254

MAC

199.815.994

Fus. Sta. of .25 MAC

1463.3543.901

W.P. of .25 MAC

635.5219.066

B.L. of .25 MAC

0.00.0

Airfoil Section

Leading Wedge Angle - Deg.

10.010.0

Trailing Wedge Angle - Deg.

14.9214.92

Leading Edge Radius

2.00.060

Void Area

13.170.0019

Blanketed Area

0.00.0

TABLE III (Conl'd)

MODEL COMPONENT: WING-W₁₆GENERAL DESCRIPTION: Configuration 4NOTE: Identical to W₁₁, except airfoil thickness. Dihedral angle is along
trailing edge of wing.MODEL SCALE: 0.030

TEST NO.

DWG. NO. VL70-000140A, -000200

DIMENSIONS:

FULL-SCALE

MODEL SCALE

TOTAL DATA

Area (Theo.) Ft²

Planform

Span (Theo) In.

Aspect Ratio

Rate of Taper

Taper Ratio

Dihedral Angle, degrees

Incidence Angle, degrees

Aerodynamic Twist, degrees

Sweep Back Angles, degrees

Leading Edge

Trailing Edge

0.25 Element Line

Chords:

Root (Theo) B.P.O.O.

Tip, (Theo) B.P.

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

EXPOSED DATA

Area (Theo) Ft²

Span, (Theo) In. BP108

Aspect Ratio

Taper Ratio

Chords

Root BP108

Tip 1.00 $\frac{b}{2}$

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

Airfoil Section (Rockwell Mod NASA)
XXXX-64Root $\frac{b}{2}$ =Tip $\frac{b}{2}$ =

Data for (1) of (2) Sides

Leading Edge Cuff 2

Planform Area Ft²

Leading Edge Intersects Fus M. L. @ Sta

Leading Edge Intersects Wing @ Sta

2690.00

936.68

2.265

1.177

0.200

3.500

0.500

45.000

- 10.056

35.209

689.24

137.85

474.81

1136.83

290.58

182.13

1751.50

720.68

2.059

0.245

562.09

137.85

392.83

1185.98

295.30

251.77

0.113

0.120

2.421

28.10

2.265

1.177

0.200

3.500

0.500

45.000

- 10.056

35.209

20.677

4.136

14.244

34.105

8.717

5.464

1.576

21.620

2.059

0.245

16.863

4.136

11.785

35.579

8.829

7.555

0.113

0.120

113.18

500.0

1025.0

0.102

15.0

30.720

TABLE IV.

FUSELAGE PRESSURE TAP LOCATIONS -

Orbiter - IN.		Φ RADIAL LOCATION - DEGREES																No. of Taps
		Full Model	X_c/L_c	0	20	40	55	70	90	105	110	120	135	140	150	154	156	
235	7.05	0	7															1
245	7.35	.008	8						9									1
265	7.95	.023	11	12	13	14	15	16				17			18			3
295	9.85	.046		24	25	26	27	28				29			30			9
325	9.75	.070		36	37	38	39	40				41			42			13
330	11.40	.112	47	48	49	50	51	52				53			54			31
440	13.20	.158																43
450	13.50	.166	60	61	62	63	64	65				66			67			53
465	13.95	.177																57
500	15.00	.204	75	76	77	78	79	80				81			82	83		69
560	16.80	.251	89		90		91	92				93			94			69
625	18.75	.301	98		99		100	101				102			103			10
725	21.75	.378	107		108		109	110				111			112			2
880	24.40	.497	116		117		118	119				120			121			51
980	29.40	.574	125		126										122			2
1080	32.40	.652	128		129							132			133			11
1180	35.40	.729	137		138							141			142			11

FUSELAGE PRESSURE TAP LOCATIONS

45

TABLE V.

η	%	LEFT WING PRESSURE TAP LOCATIONS																16 TAPS	24 TAPS
		X/C	C	.04	.113	.207	.429	.507	.633	.727	.793								
.235	110	TOP	208	209	210	211	212	213	214	215	216							9	9
		BOT	—	—	—	—	—	—	—	—	—							0	
		X/C	C	.010	.020	.030	.040	.050	.060	.070		.100	.090	.085	.900	.905			
.289	140	TOP	217	219	220	221	222	223	224	224		225	226	227	228	229		13	34
		BOT		230	231	232	233	234	235	236		237	238	239	240	241		12	
		X/C	C	.010	.020	.030	.040	.050	.060	.070		.100	.090	.085	.879	.919	.955		
.364	170	TOP	242	243	244	245	246	247	248	249		250	251	252	253	254	255	14	61
		BOT		256	257	258	259	260	261	262		263	264	265	266	267	268	13	
		X/C	C	.010	.020	.030	.040	.050	.060	.070		.100	.090	.085	.879	.919	.955		
.427	200	TOP	269	270	271	272	273	274	275	276	277	278	279	280	281	282		14	89
		BOT		283	284	285	286	287	288	289	290	291	292	293	294	295	296	14	
		X/C	C	.010	.020	.030	.040	.050	.060	.070		.100	.090	.085	.879	.919	.955		
.534	250	TOP	297	298	299	300	301	302	303	304	305	306	307	308	309	310		14	116
		BOT		311	312	313	314	315	316	317	318	319	320	321	322	323		13	
		X/C	C	.010	.020	.030	.040	.050	.060	.070		.100	.090	.085	.879	.919	.955		

TABLE V. - Concluded.

η	γ	LEFT WING PRESSURE TAP LOCATIONS																16 TAP	Σ 16 TAPS
		$\frac{1}{2}$ C	0	.010	.020	.050	.150	.250	.400	.550	.700	.775	.850	.920	1.00				
641	300	TOP										333	334	337				3	123
		BOT										341	345	346	347			4	
673	345	$\frac{1}{2}$ C	0	.010	.020	.050	.150	.250	.400	.550	.700	.775	.850	.920	1.00			9	140
		TOP	324	325	326	327	328	329	330	331	332							8	
		BOT		336	337	338	339	340	341	342	343								
700	365	$\frac{1}{2}$ C	0	.010	.020	.050	.150	.250	.400	.550	.700	.775	.850	.920					159
		TOP	348	349	350	351	352	353	354	355	356	357						10	
		BOT		358	359	360	361	362	363	364	365	366						9	
807	445	$\frac{1}{2}$ C	0	.010	.020	.050	.150	.250	.400	.550	.700	.775	.850	.920					179
		TOP	367	368	369	370	371	372	373	374	375	376						10	
		BOT		377	378	379	380	381	382	383	384	385	386					10	
972	455	$\frac{1}{2}$ C	0	.020	.069	.157	.345	.503	.670	.862									194
		TOP	387	388	389	390	391	392	393	394								8	
		BOT		395	396	397	398	399	400	401								7	
10	443	$\frac{1}{2}$ C	.48	.743															196
		TOP	402	403														2	
		BOT																	

TABLE VI.

ORBITER VERTICAL TAIL $\frac{1}{2}$ SPEED BRAKE
PRESSURE TAP LOCATIONS

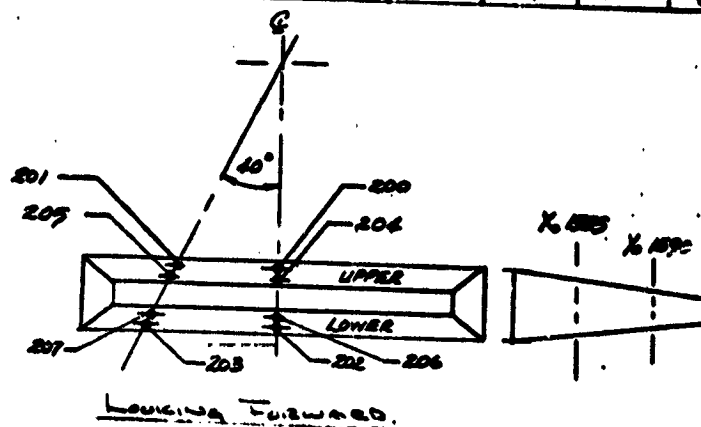
VERTICAL (LN ONLY)		X/C _v												
Z, FEET 550	W, HOURS 16.5	η _v	0	.025	.05	.15	.30	.52	.685	.775	.90	NO TAPS	Σ NO TAPS	
550	16.5	.153	430	431	432	433	434	435	436	437		8	8	
600	18.0	.316	438	439	440	441	442	443	444	445	446	9	17	
645	19.35	.458							444	445	446	3	20	
690	20.70	.600	447	448	449	450	451	452	453	454	455	9	29	
720	21.6	.720							453	454	455	3	32	
765	22.95	.840	456	457	458	459	460	461	462	463	464	9	41	
792	23.76	.925	465	466	467	468	469	470	471	472	473	9	50	

SPEED BRAKE (N N)		X/5BV									
Full Z ₀ Scale	Z ₀ Model Scale	$\pi/5B$.10	.25	.40	.65	.90	No Taps	Σ No Taps		
600	18.0	.110	801	802	803	804	805	5	5		
630	18.9	.254	806	807	808	809	810	5	10		
666	19.8	.407	811	812	813	814	815	5	15		
690	20.7	.547	816	817	818	819	820	5	20		
720	21.6	.706	821	822	823	824	825	5	25		
750	22.5	.856	826	827	828	829	830	5	30		

TABLE VII.

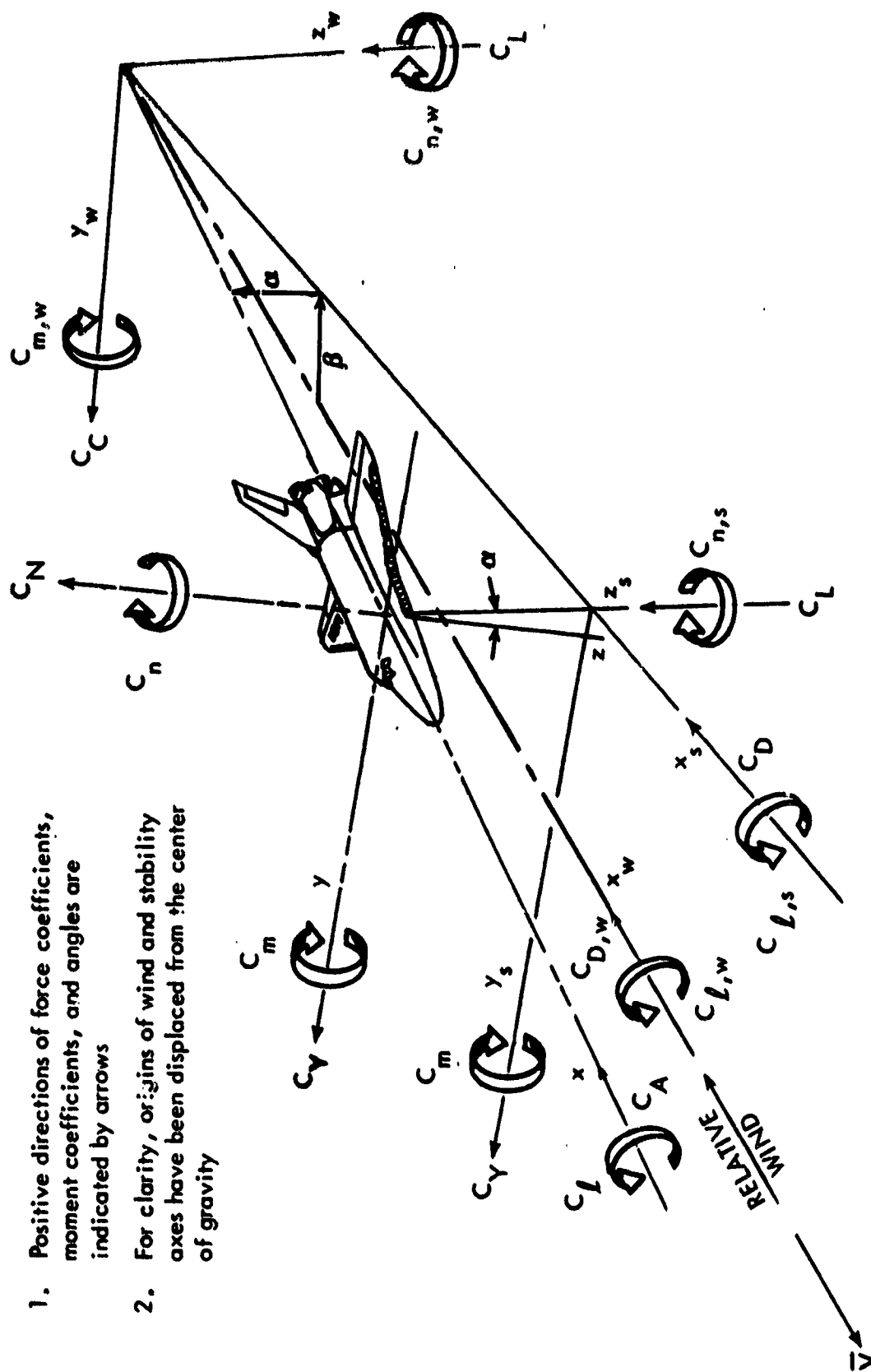
DOGVFLAP PRESSURE TAP LOCATIONS

ORBITER-X ₀			ϕ - DEGREES		No. TAPS	Σ No. TAPS
FULL SCALE	MODEL SCALE	X ₀ /L	0	40		
1555 U	46.65	1.018	200	201	2	2
1555 L	46.65	1.018	202	203	2	4
1590 U	47.70	1.046	204	205	2	6
1590 L	47.70	1.046	206	207	2	8



Notes

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

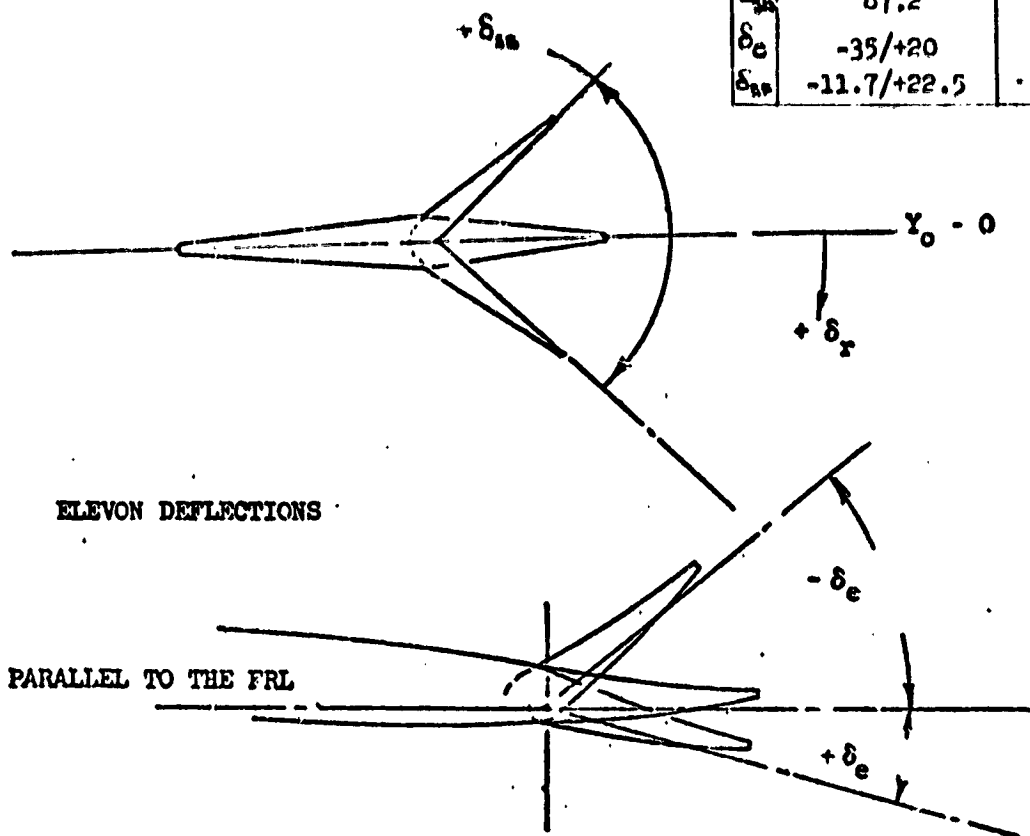


a. Orbiter Axis Systems

Figure 1. - Axis systems and sign conventions

RUDDER AND SPEED BRAKE DEFLECTIONS
(PARALLEL TO THE FRL)

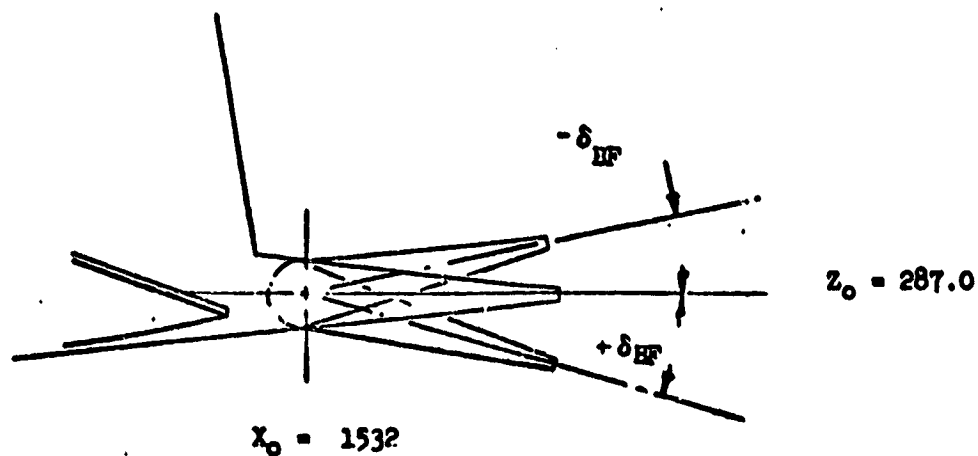
Maximum Deflections		
Vehicle 143000 Test CA15		
δ_r	22.8	± 10
δ_{sb}	87.2	BS
δ_e	-35/+20	± 10
δ_{bf}	-11.7/+22.5	-11.7 / +22.5



ELEVON DEFLECTIONS

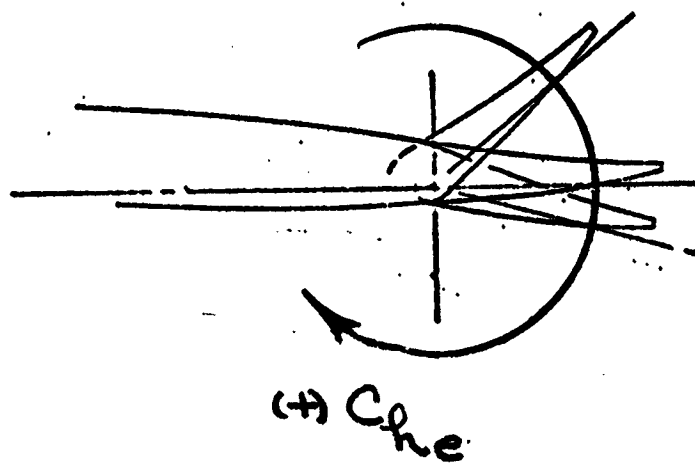
PARALLEL TO THE FRL

BODY FLAP DEFLECTIONS



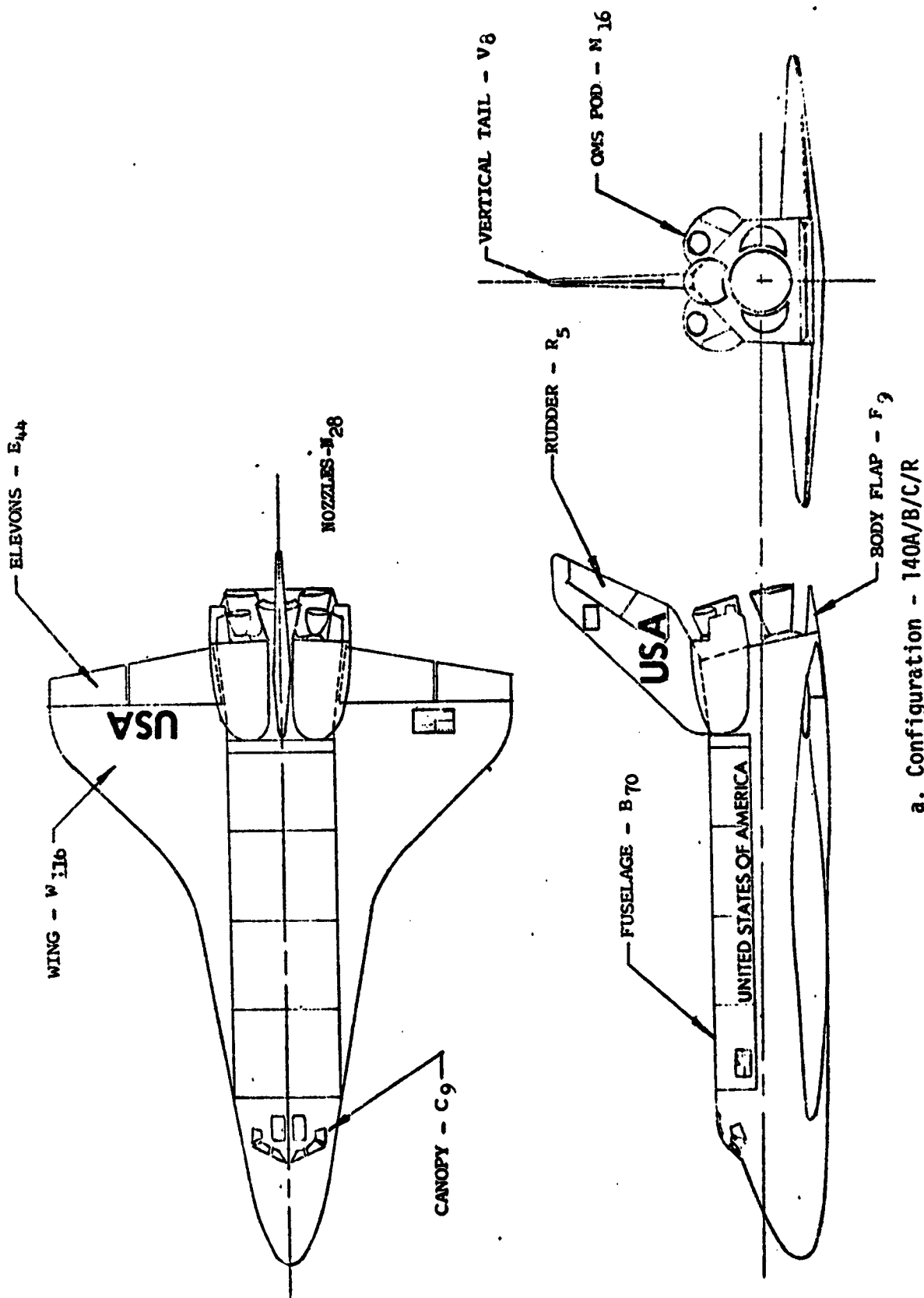
b. Definition of Angular Measurements

Figure 1. - Continued.



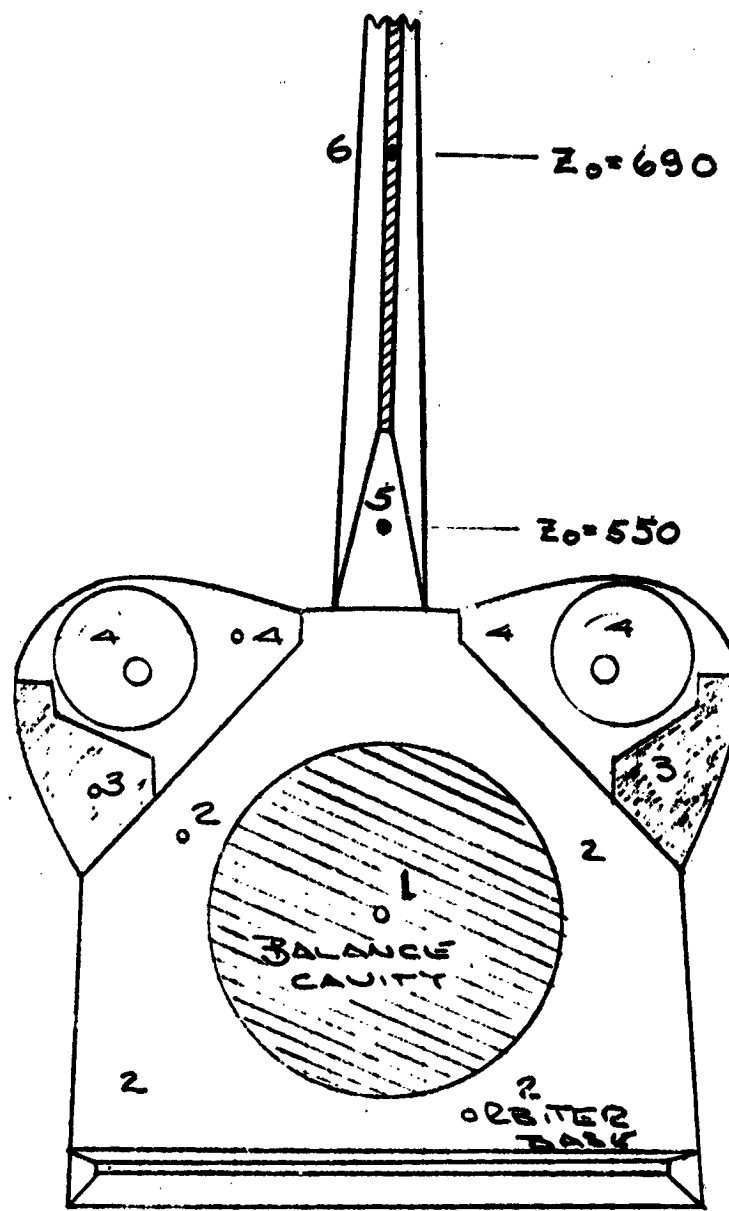
c. Elevon Hinge Moment Sign Convention

Figure 1. - Concluded.



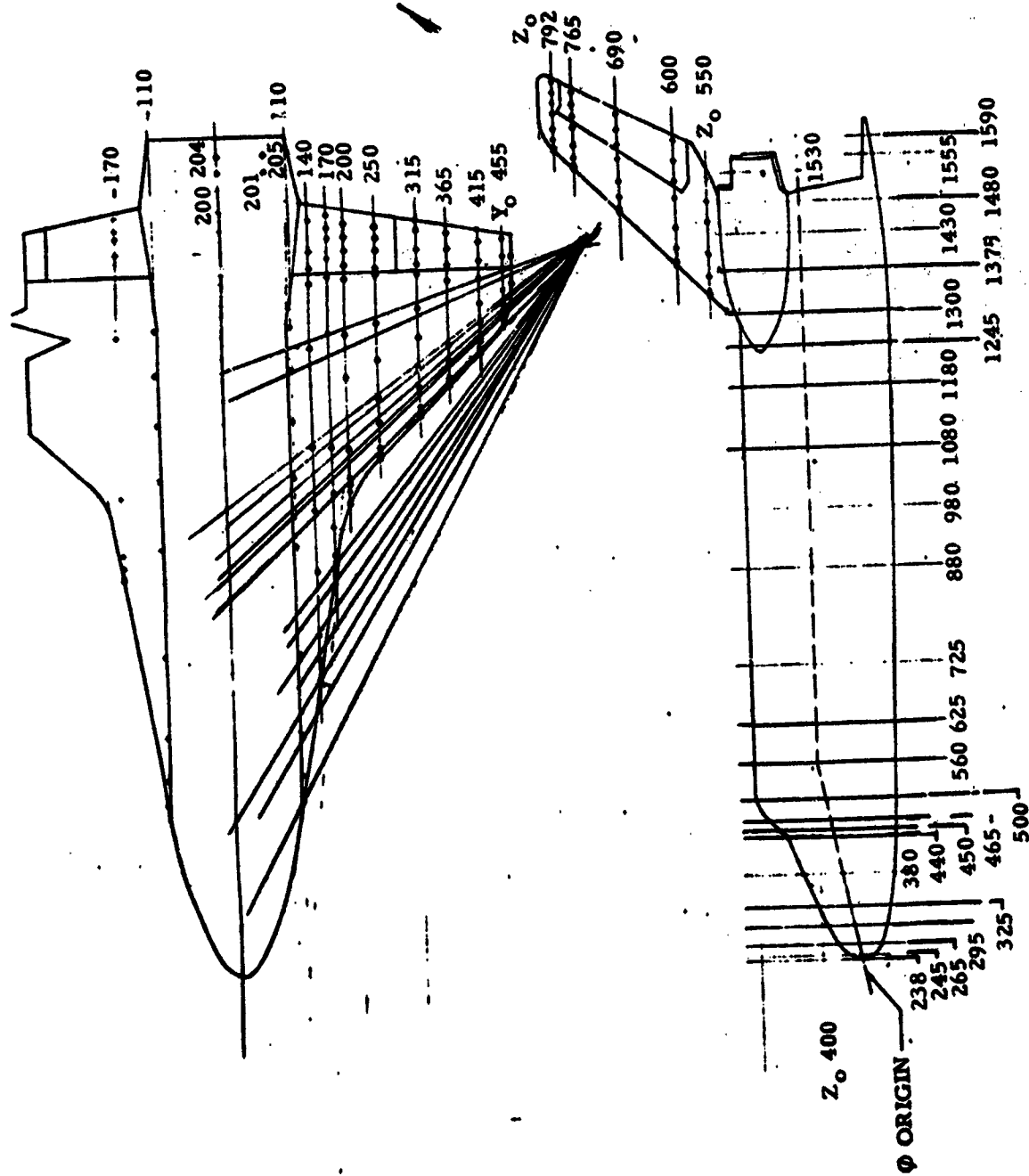
a. Configuration - 140A/B/C/R

Figure 2. - Model sketches.



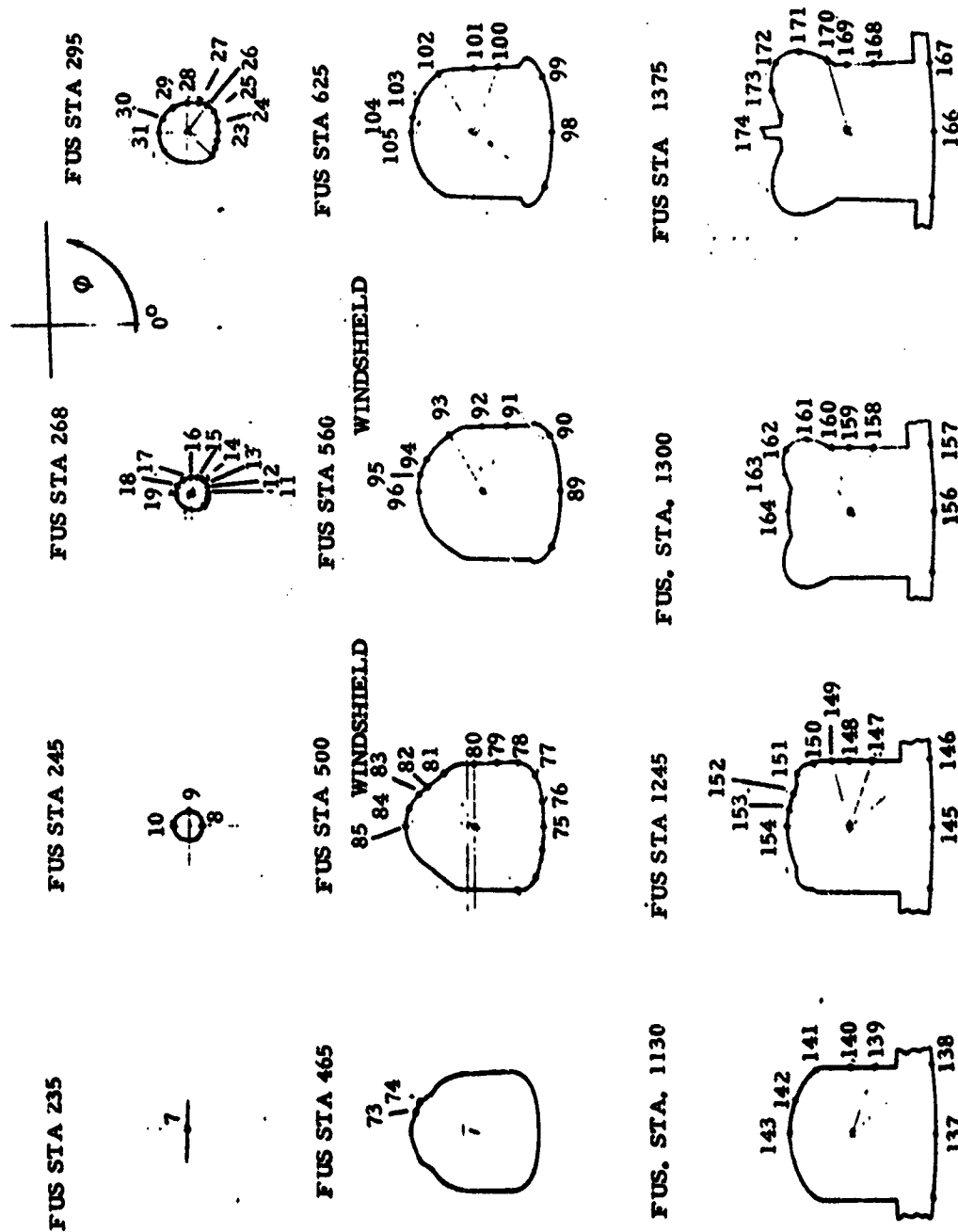
AREA NO.	PROJECTED AXIAL VALUE
A1	0 076699 A2
A2	0 215695 A2
A3	0 034072 A1
A4	0 074167 A1

b. Base Pressure Taps and Areas
Figure 2. - Continued.



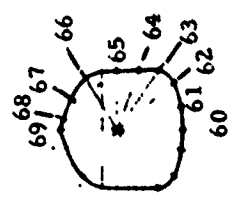
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.

NOTE: VIEW LOOKING AFT

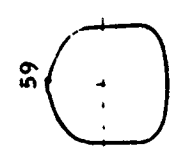


c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.

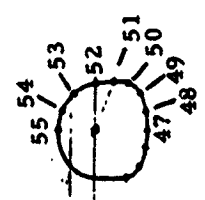
FUS STA 450



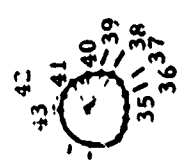
FUS STA 440



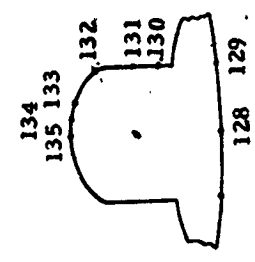
FUS STA 380



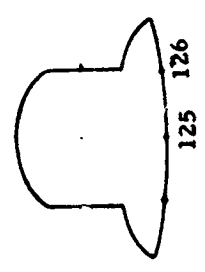
FUS STA 325



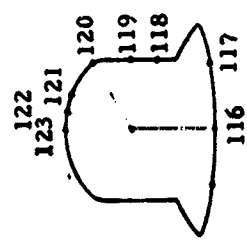
FUS STA 1080



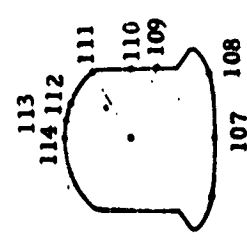
FUS STA 980



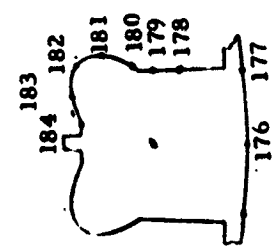
FUS STA 880



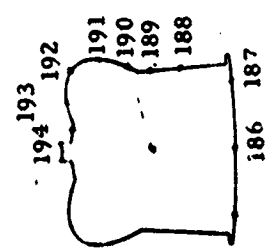
FUS STA 725



FUS STA 1430



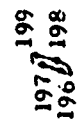
FUS STA 1480



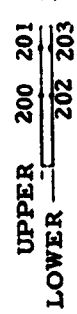
BODY FLAP

(RCS)

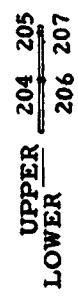
FUS STA 1530



FUS STA 1555



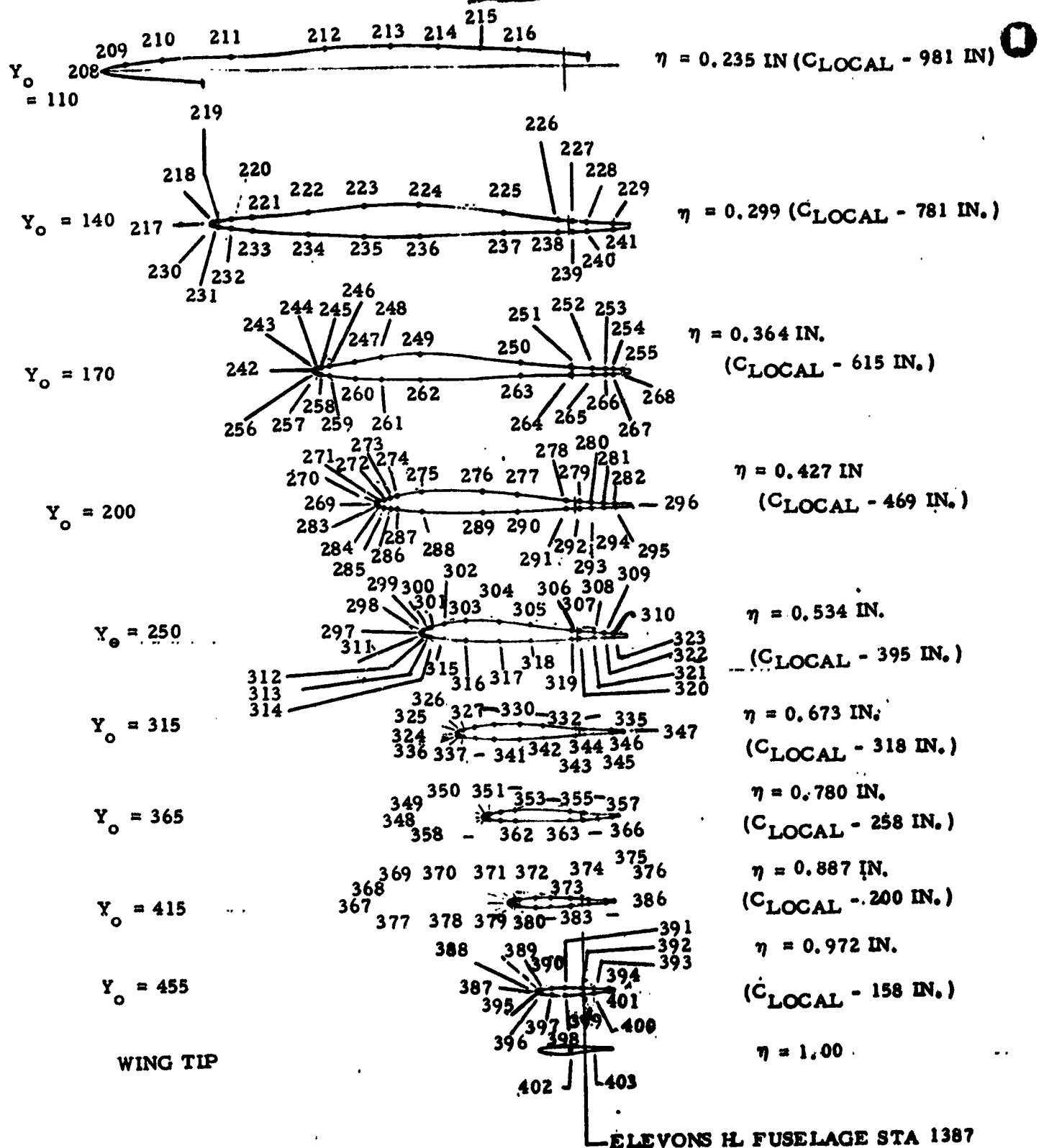
FUS STA 1590



Z 400

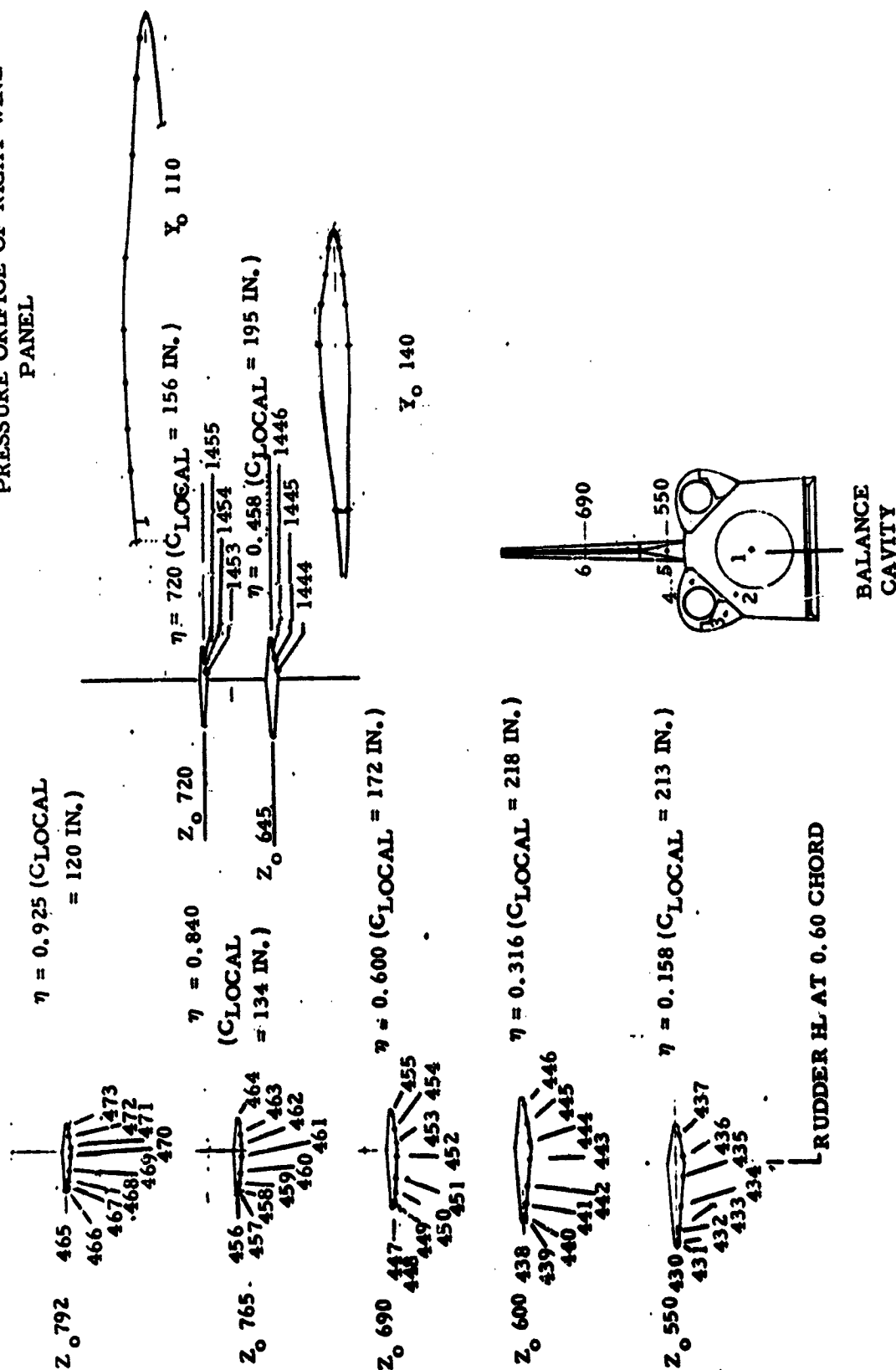
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.

PRESSURE ORIFICE LOCATION OF LEFT WING PANEL.



c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations
Figure 2. - Continued.

PRESSURE ORIFICE OF RIGHT WING PANEL



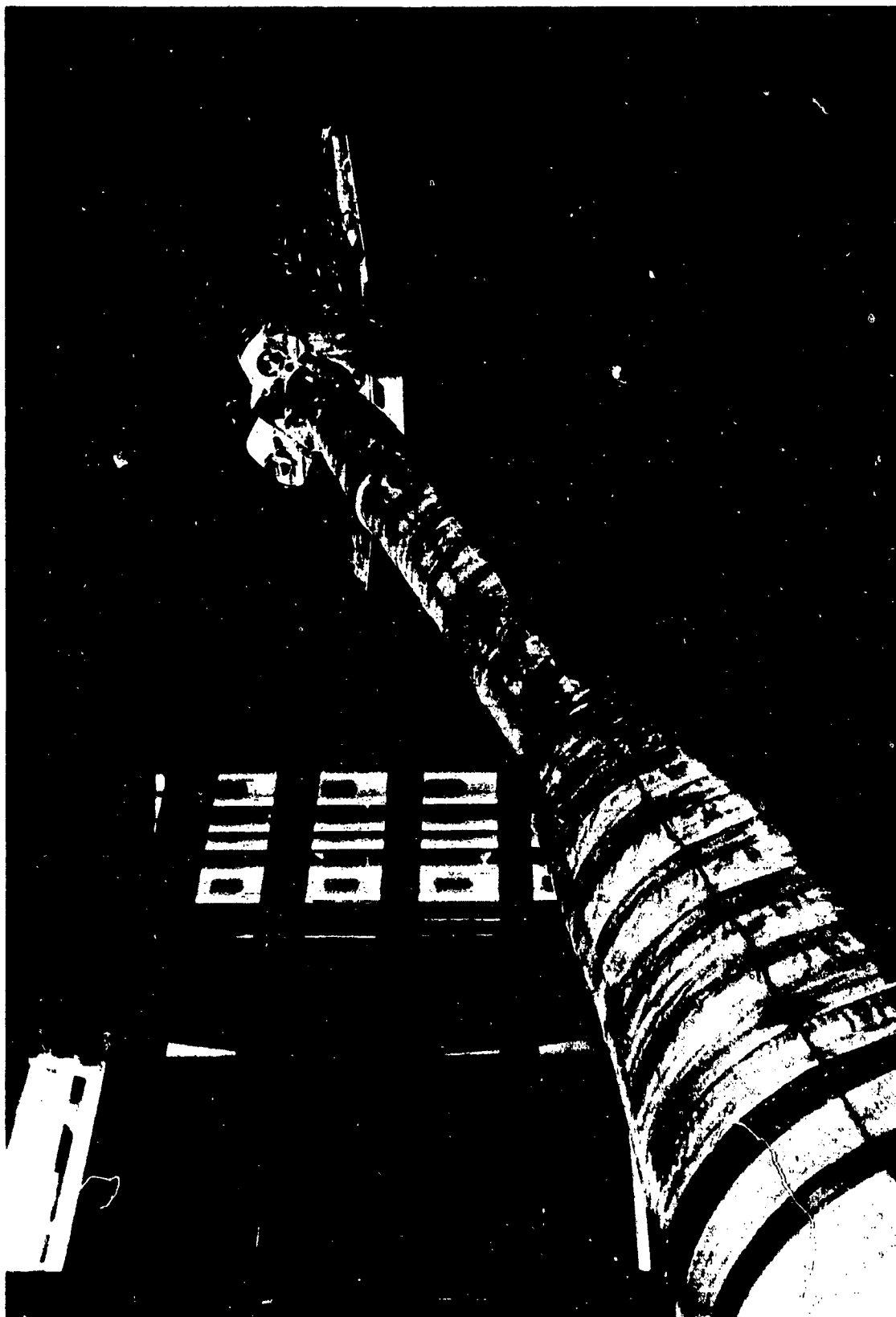
c. Fuselage, Vertical Tail, and Wing Pressure Tap Locations

Figure 2. - Concluded.



a. Three Quarter Front View of model 47-0 in the ARC 11 x 11 UPWT

Figure 3. - Model installation photographs.



b. Three Quarter Rear View of Model 47-0 in the ARC 11 x 11 UPWT

Figure 3. - Concluded.

DATA FIGURES

Volume 1	Plotted force data
Volume 2	Plotted pressure data

Tabulations of plotted data are available on
request from Data Management Services

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.300	-8.000	BD FLAP	.000 SPDRK
◇	.000			R-ELVN	.000 L-ELVN
△	4.000				.000 MACH
▽	8.000				.600
▽	12.000				

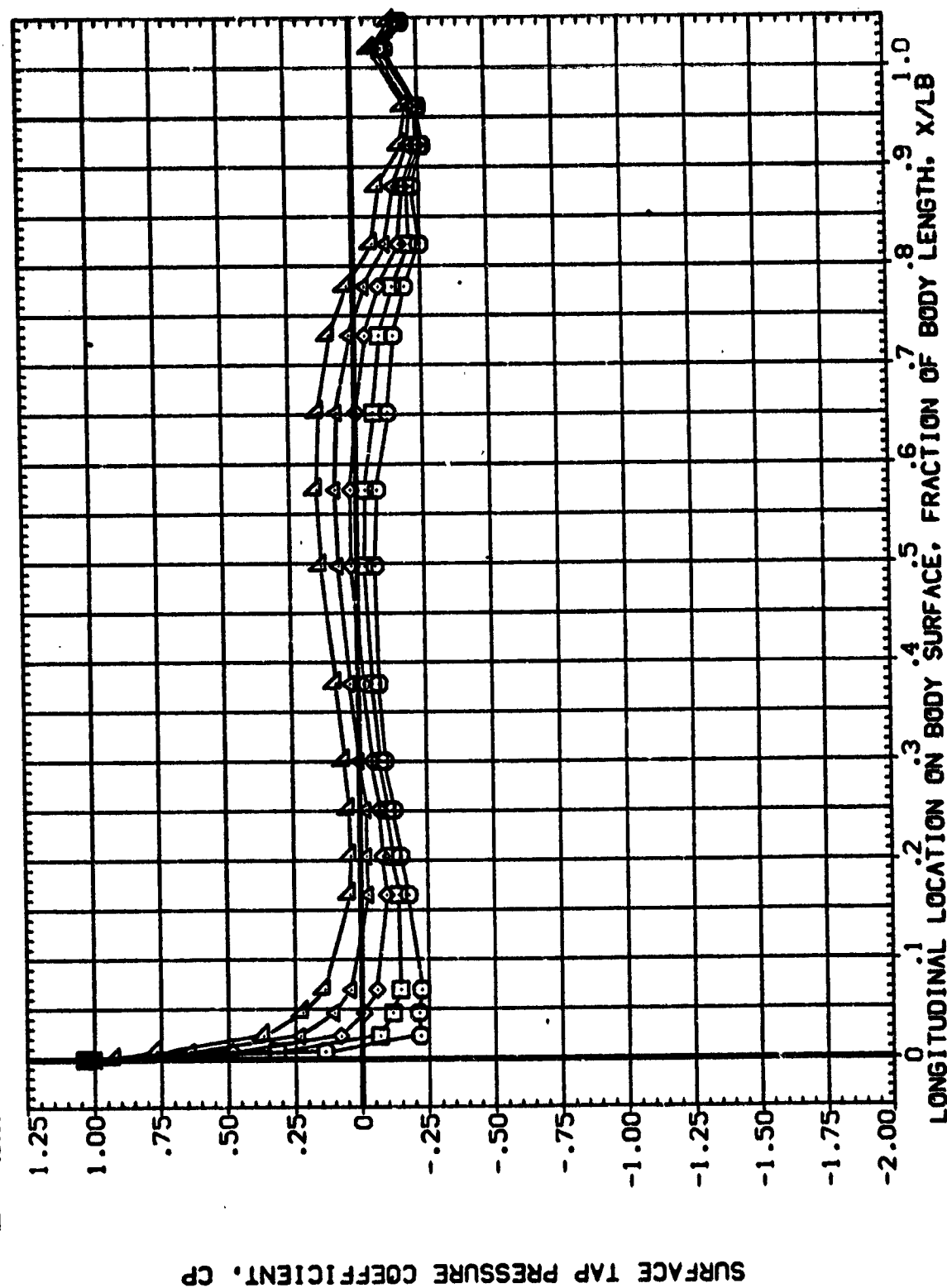


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL	ALPHA	PHI	BETA	RUDER	80FLAP	R-ELVN	WICH	PARAMETRIC VALUES
○	-4.000	40.000	-8.000	.000	.000	.000	.000	35.000
□	.000			.000	.000	.000	.000	.000
◇	4.000			.000	.000	.000	.000	.000
△	8.000			.000	.000	.000	.000	.000
▽	12.000			.000	.000	.000	.000	.000

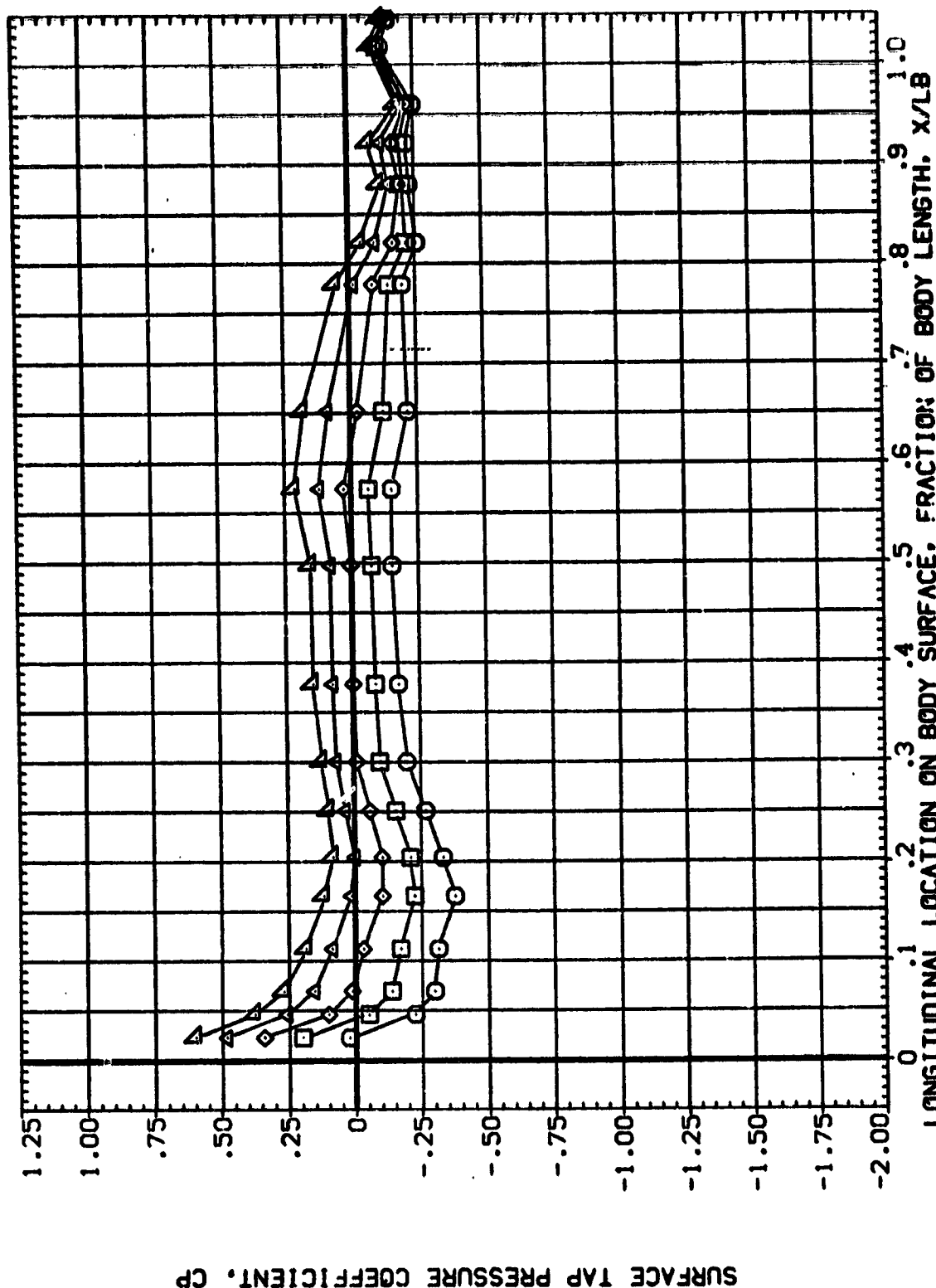


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

(IE8B17)

AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

PARAMETRIC VALUES
 .000 SPDRK 35.000
 .000 L-ELVN .000
 .000 MACH .600

R-ELVN
 BOFLAP
 RUDDER

BETA
 -8.000

PHI
 90.000

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◊ □ ◊ ▽

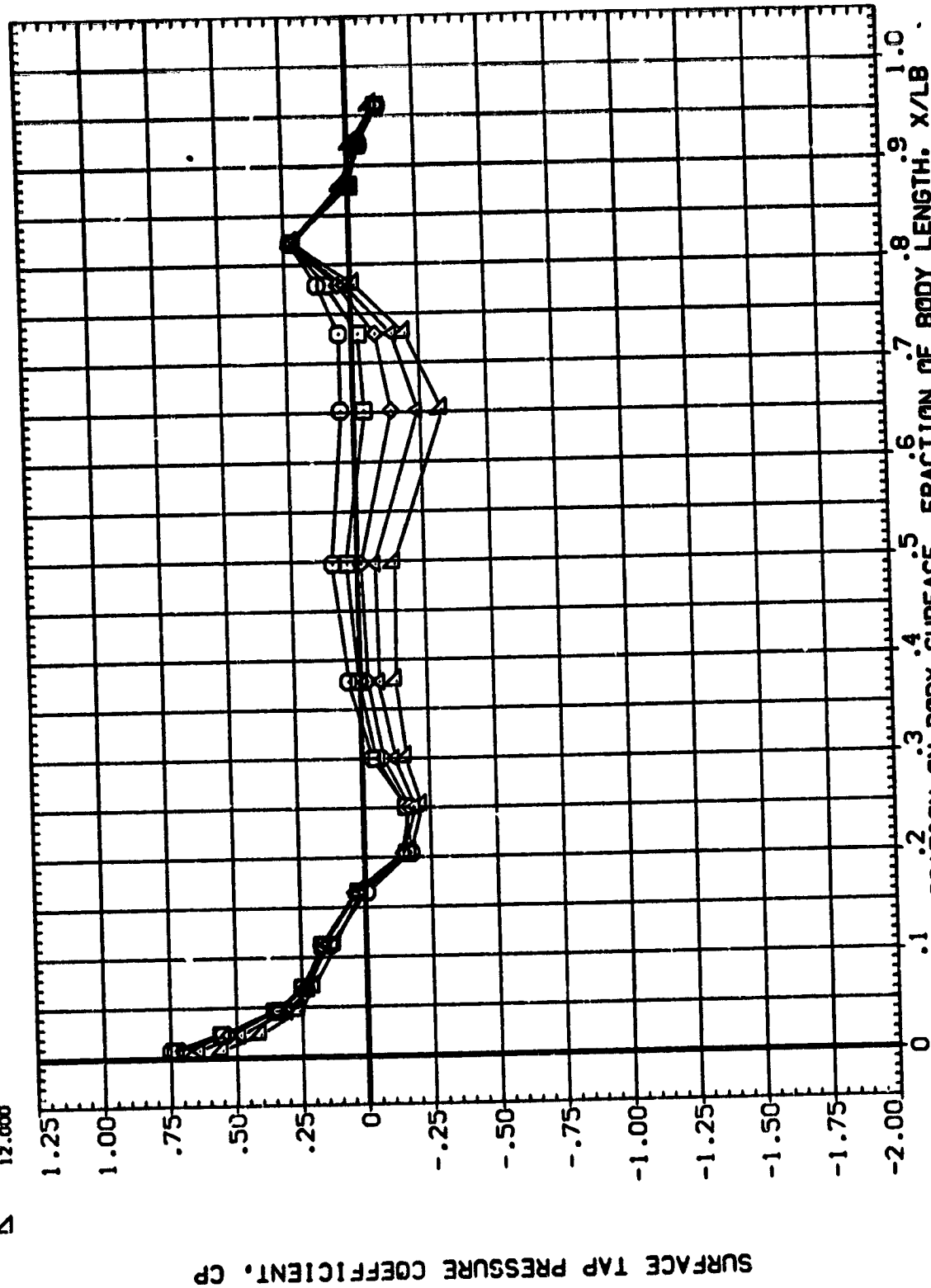


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 □
 ◇
 △

ALPHA -4.000
 .000
 4.000
 8.000
 12.000

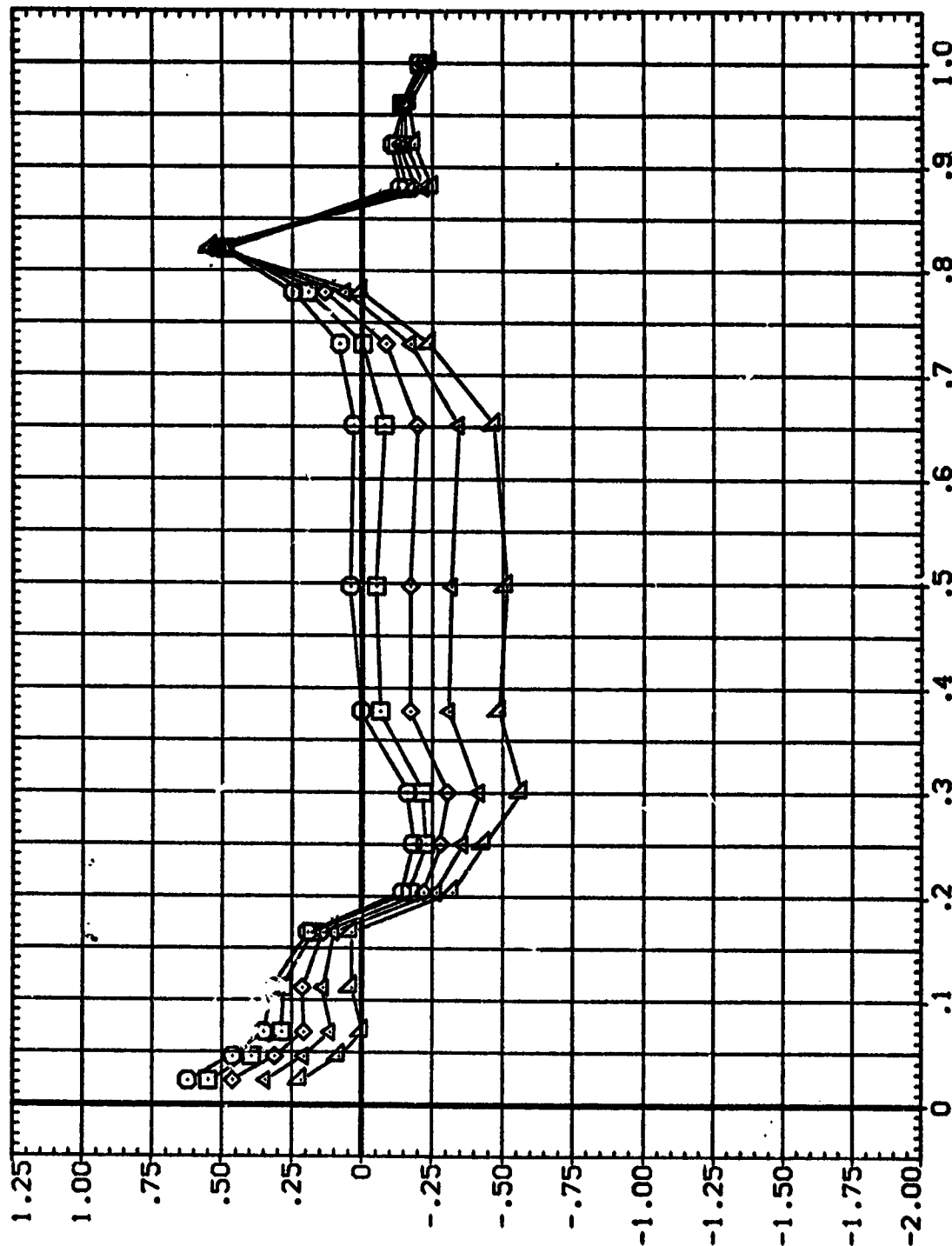
PHI 120.000

BETA -8.000

PARAMETRIC VALUES

RUDDER .000
 BDFLAP .000
 R-ELVN .000

SPDBRK 35.000
 L-ELVN .000
 MACH .600



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	150.000	-8.300	BOFLAP	.000 SPDRK 35.000
□	.000			R-ELVN	.000 L-ELVN .000
◇	4.000				.000 MACH .600
△	8.000				
▽	12.000				

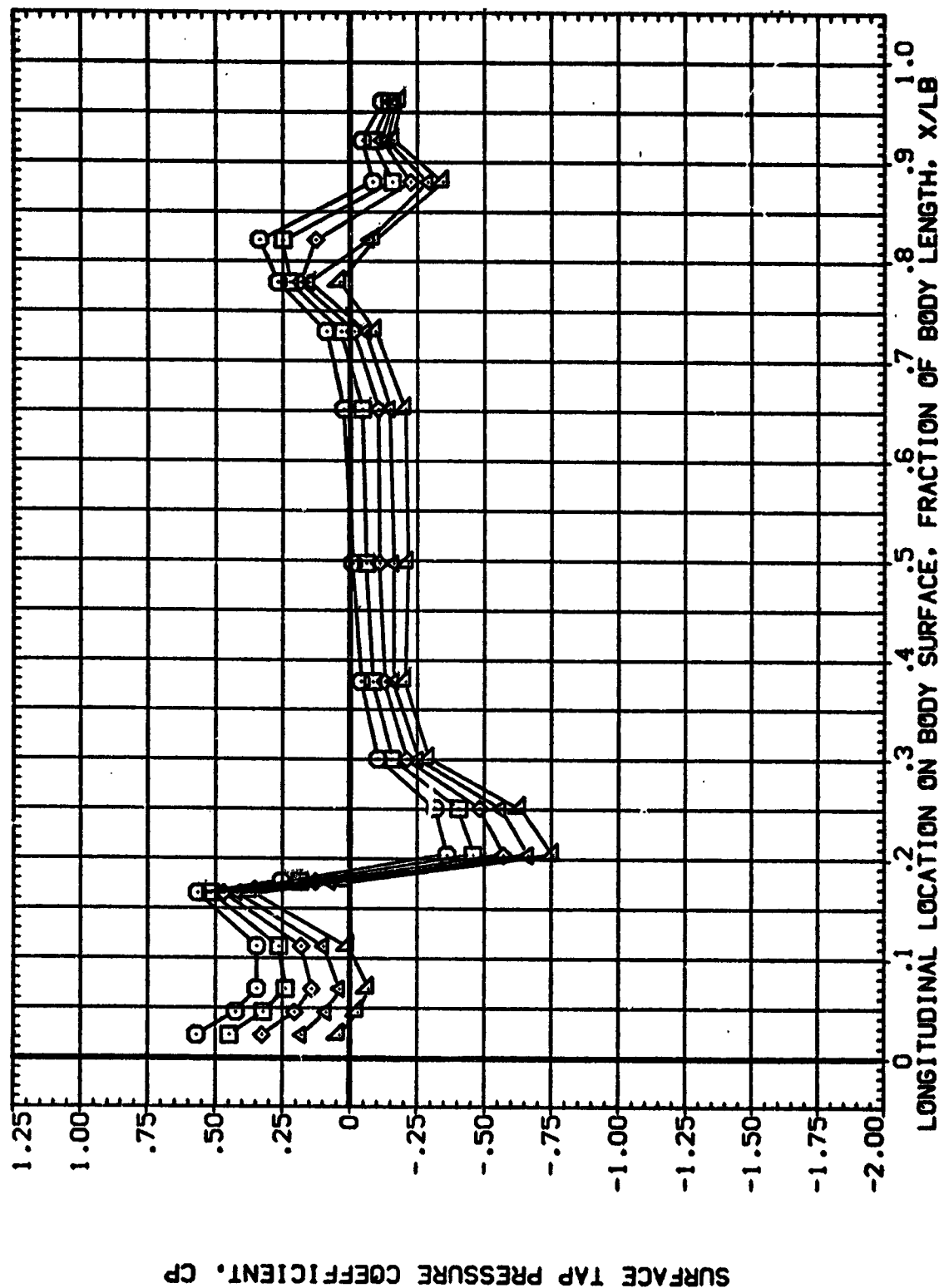


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	180.000	-8.000	BDFLAP	.000 SPDRK 35.000
□	.000			R-ELVN	.000 L-ELVN .000
△	4.000				.000 MACH .600
▽	8.000				
▽	12.000				

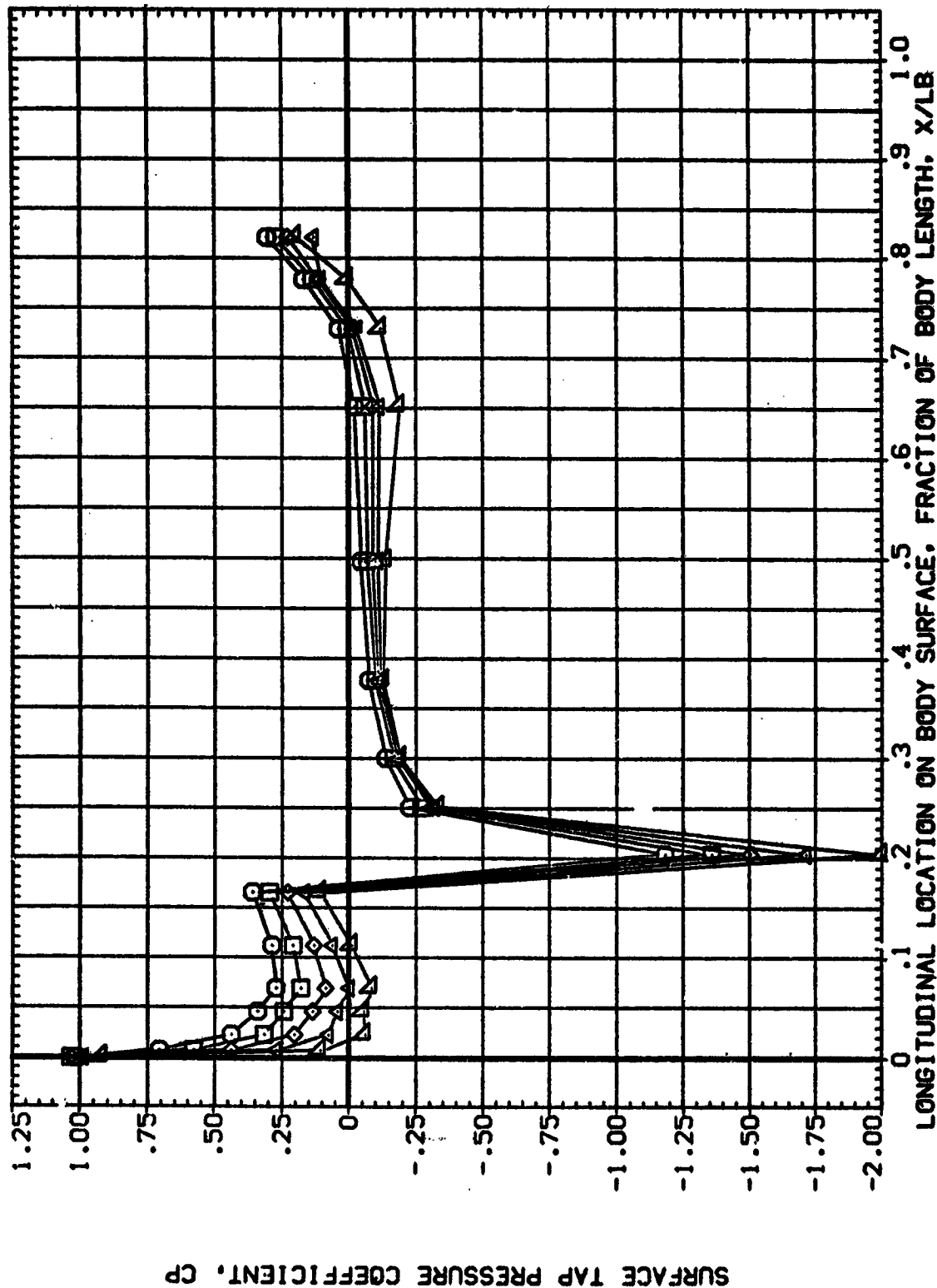


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B17)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.000	-4.000	BDFLAP	.000
◇	.000	.000	.000	R-ELVN	.000
△	4.000	.000	.000	L-ELVN	.000
□	8.000	.000	.000	MACH	.600
▽	12.000	.000	.000		35.000

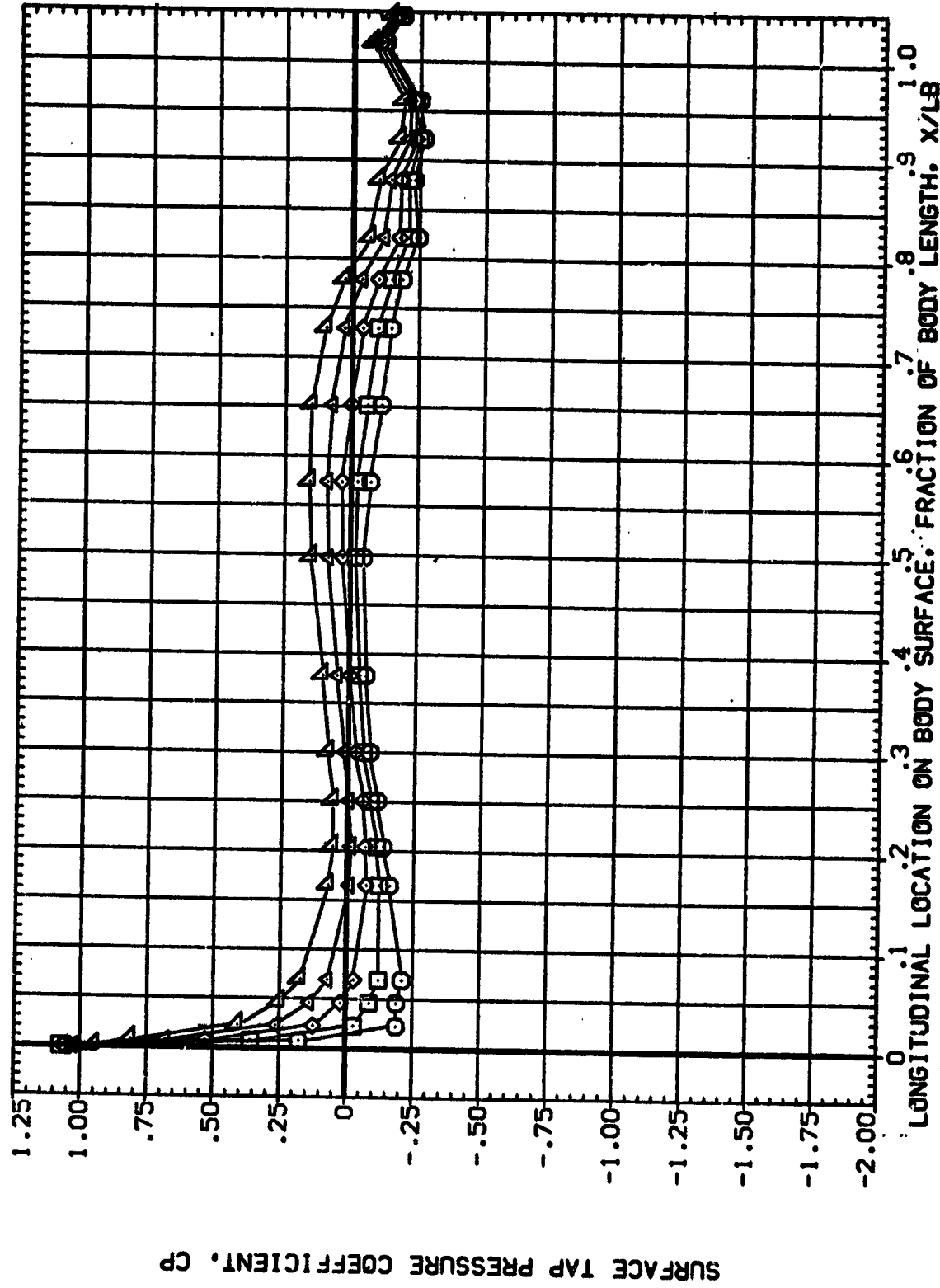


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
▽
◇
□

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
40.000
-4.000

BETA
-4.000

RUDDER
BOFLAP
R-ELVN

PARAMETRIC VALUES
.000 SPOBRK
.000 L-ELVN
.000 MACH

35.000
.000
.600

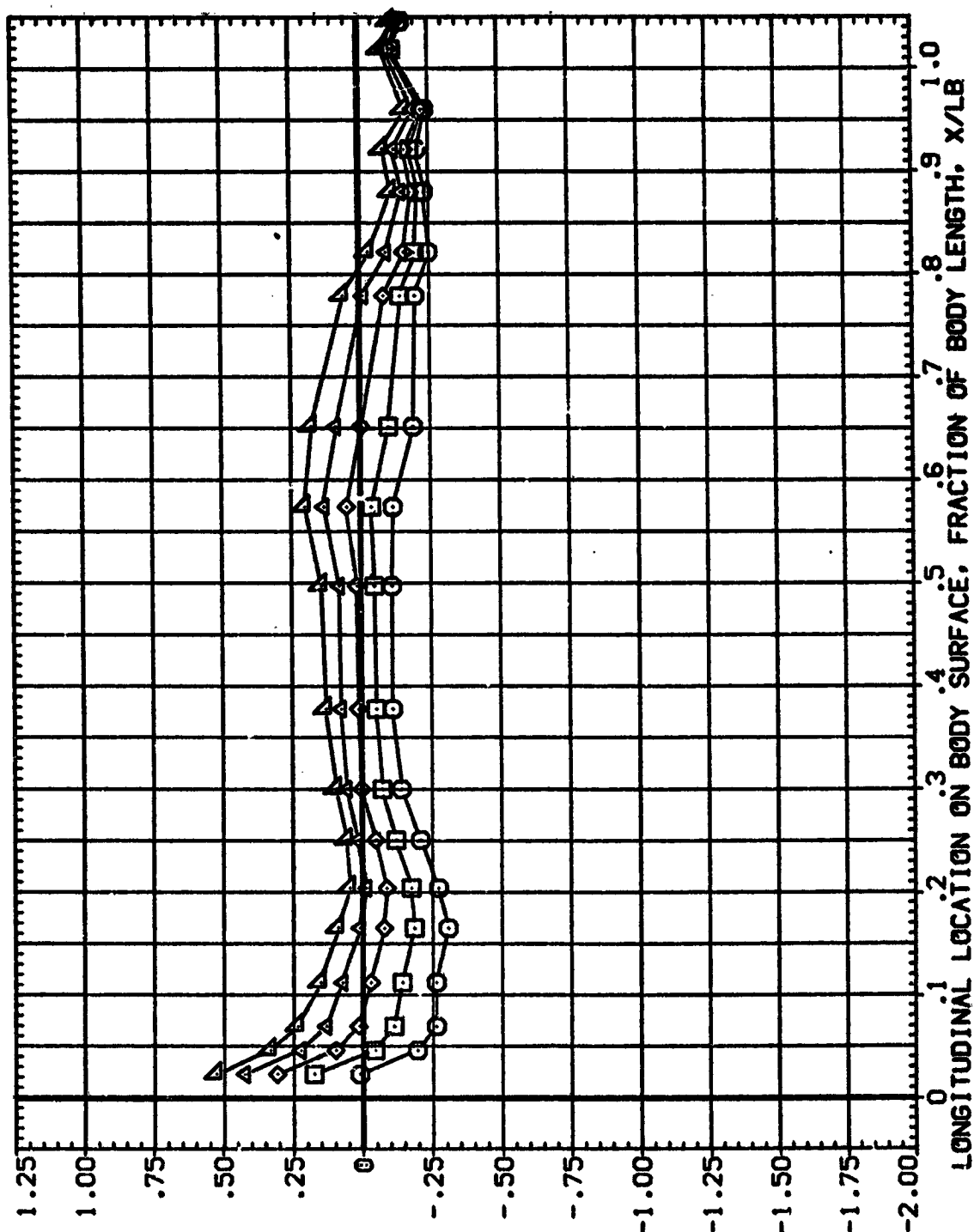


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(CA148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 90.000

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRX 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

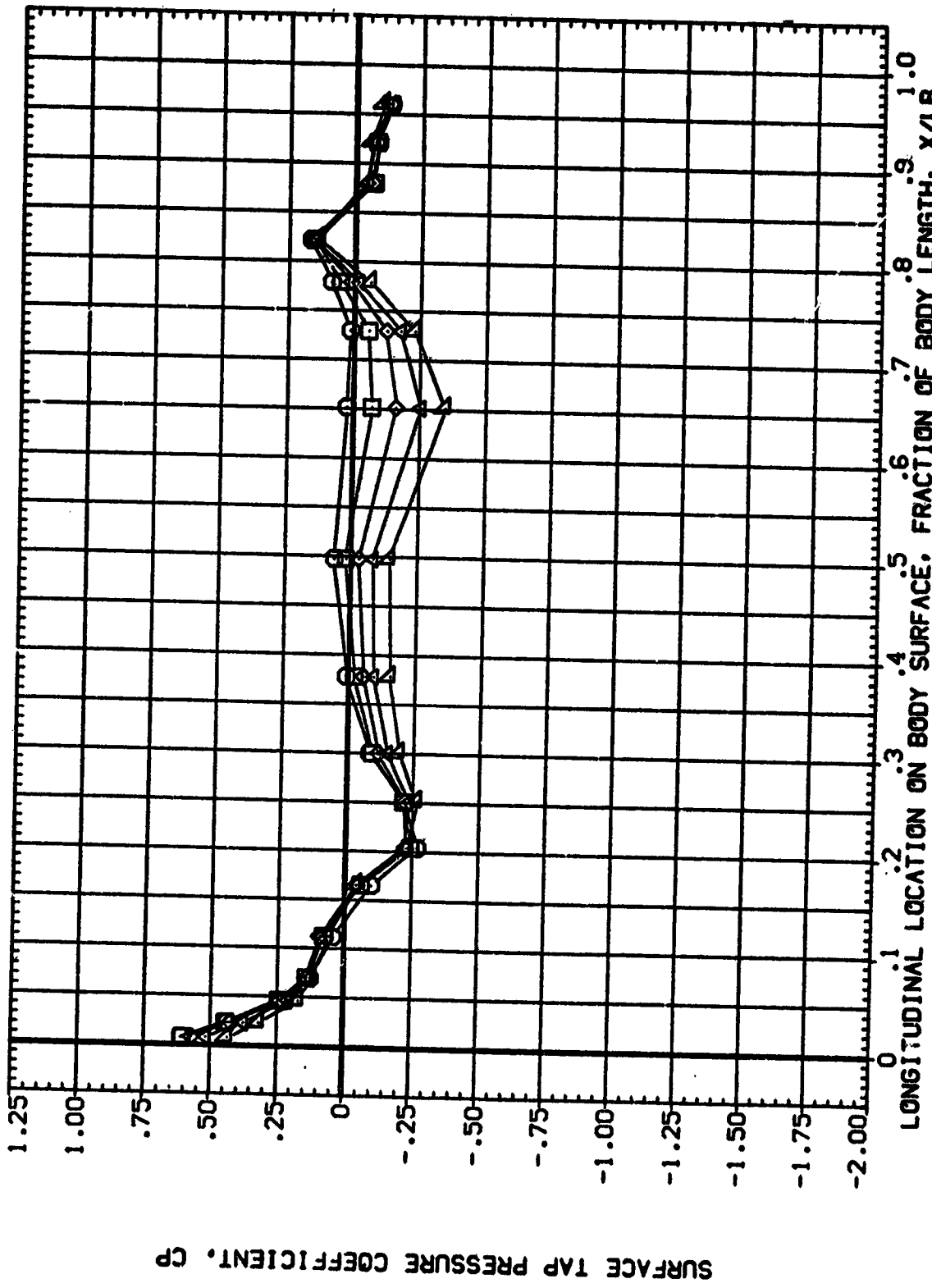


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPORRK .35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

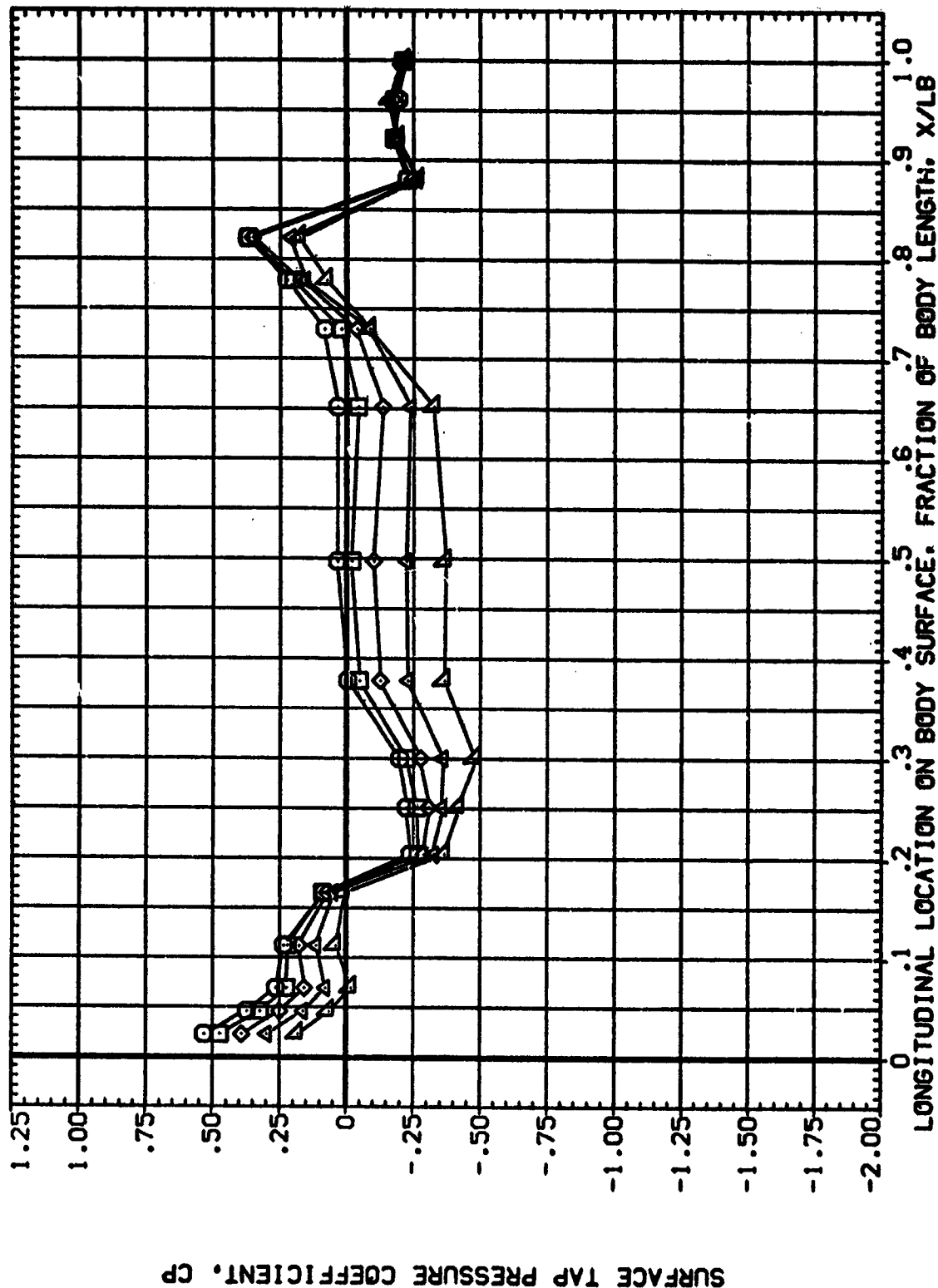


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-07500A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 150.000
 BETA -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRX 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 NACH .600

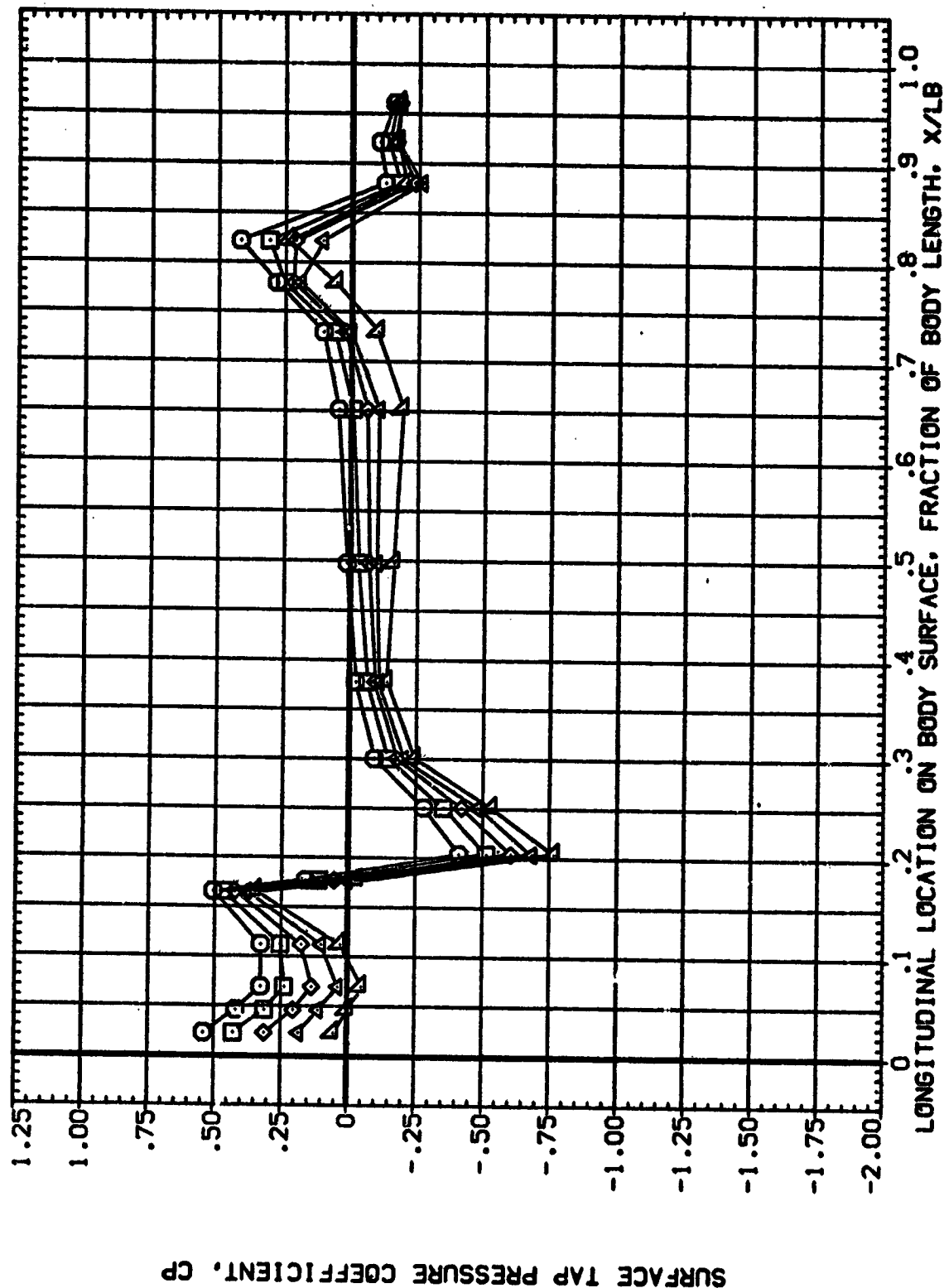


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

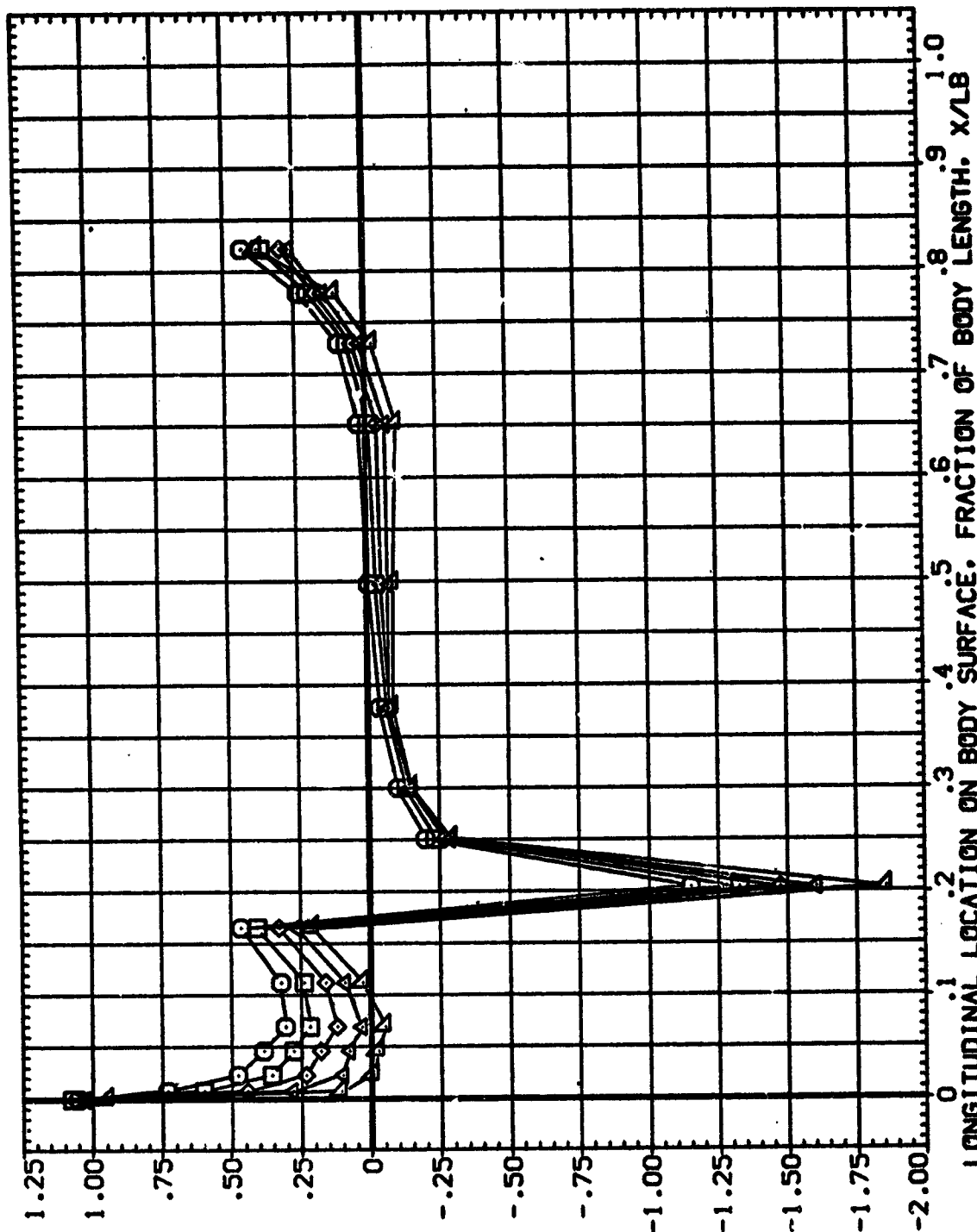


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B17)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
□	-4.000	.000	.000	RUDDER .000 SPDRXK 35.000
◇	.000	.000	.000	BDFLAP .000 L-ELVN .000
△	4.000	.000	.000	R-ELVN .000
▽	8.000	.000	.000	MACH .600
▽	12.000	.000	.000	

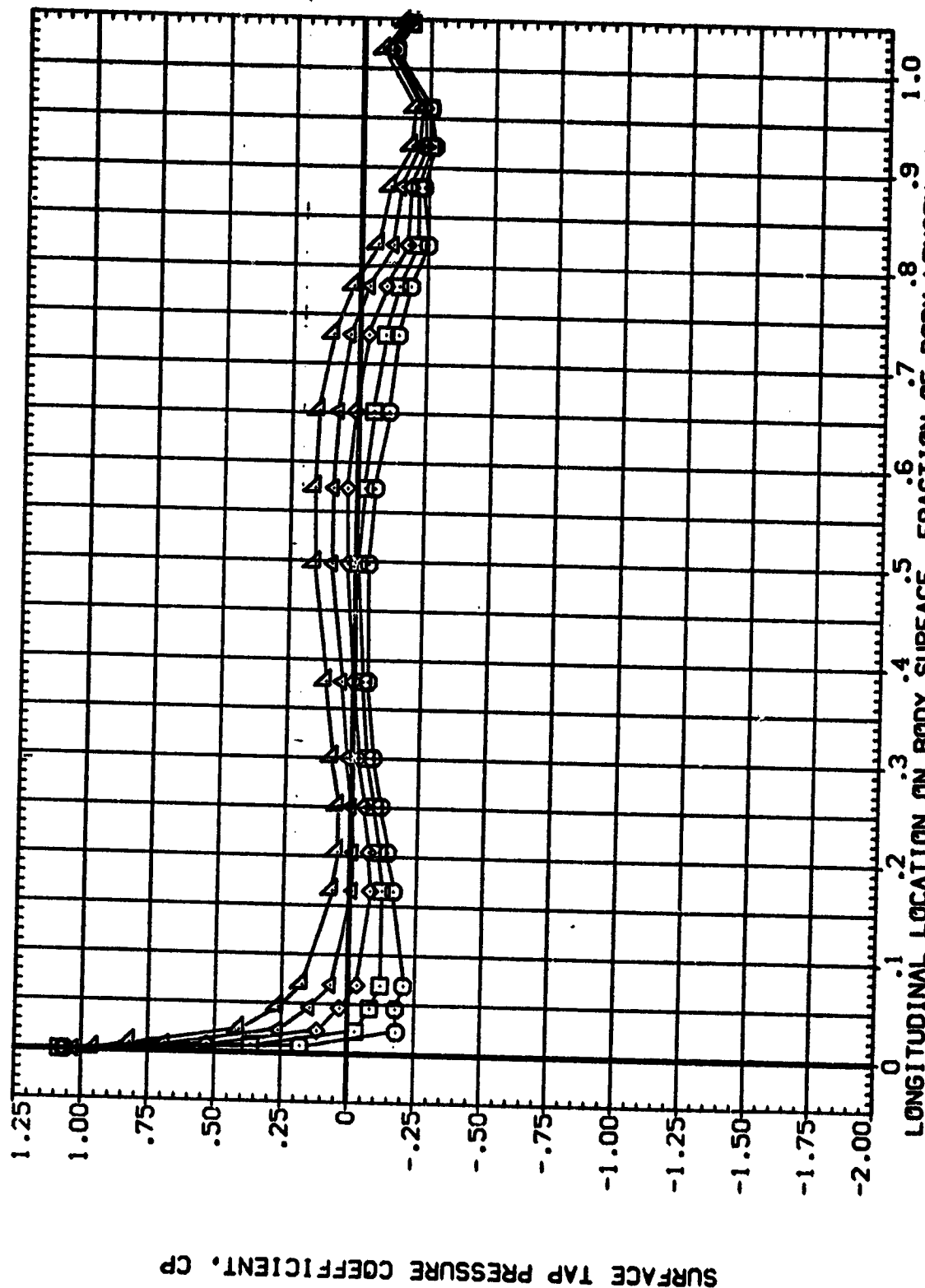


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

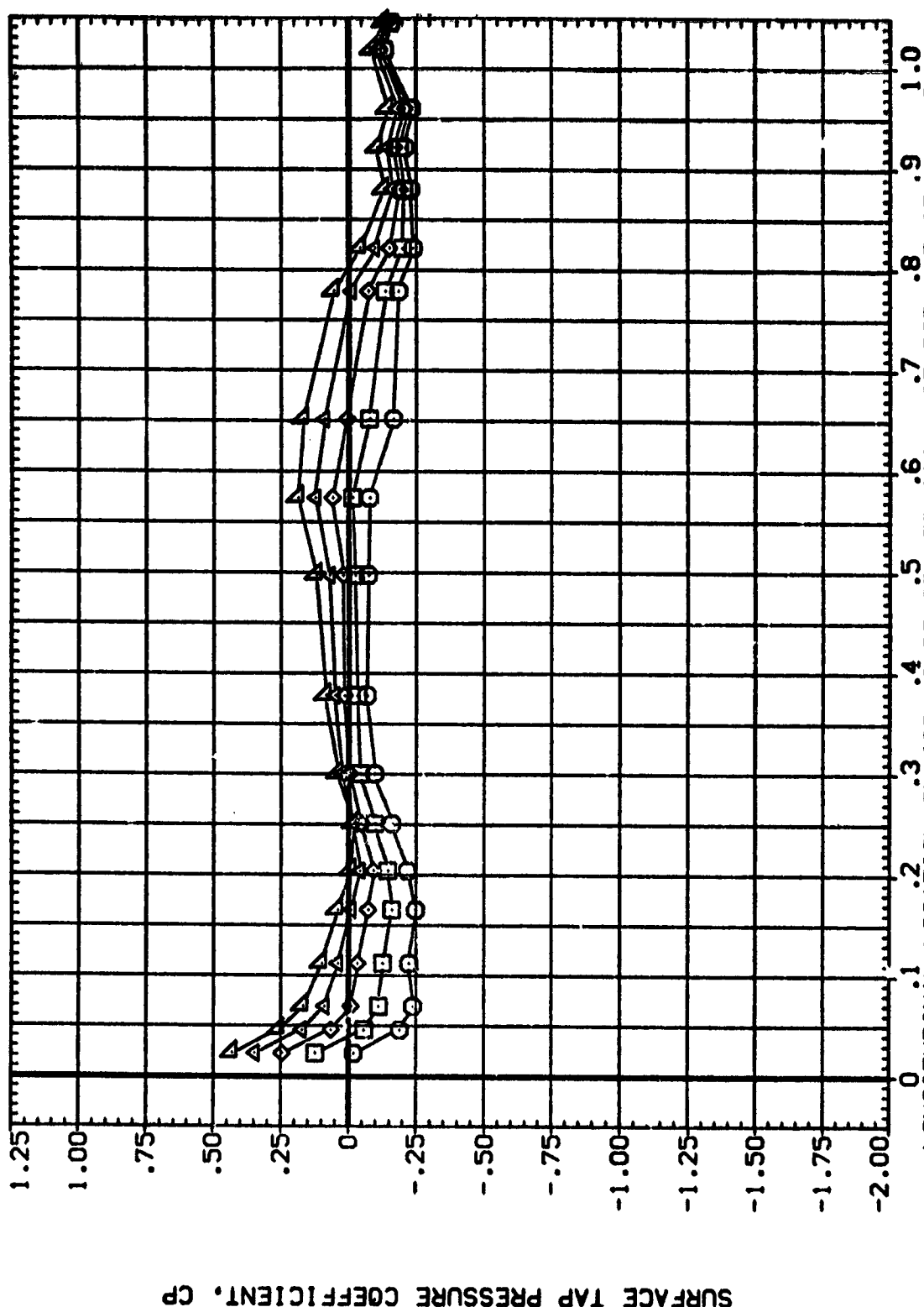


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL
 7
 4
 3
 2
 1

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 90.000
 .000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPEED .35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

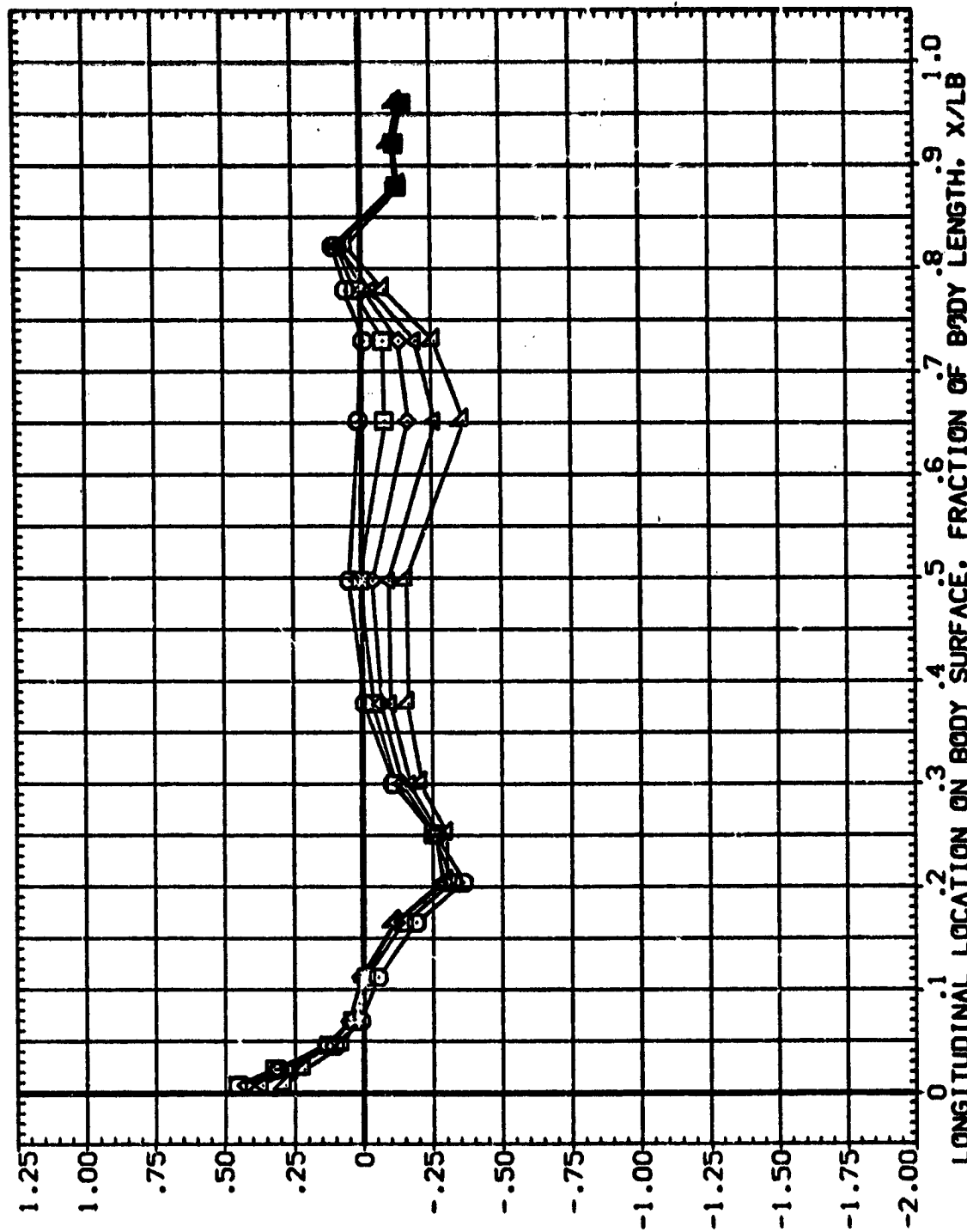


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRK .35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .500

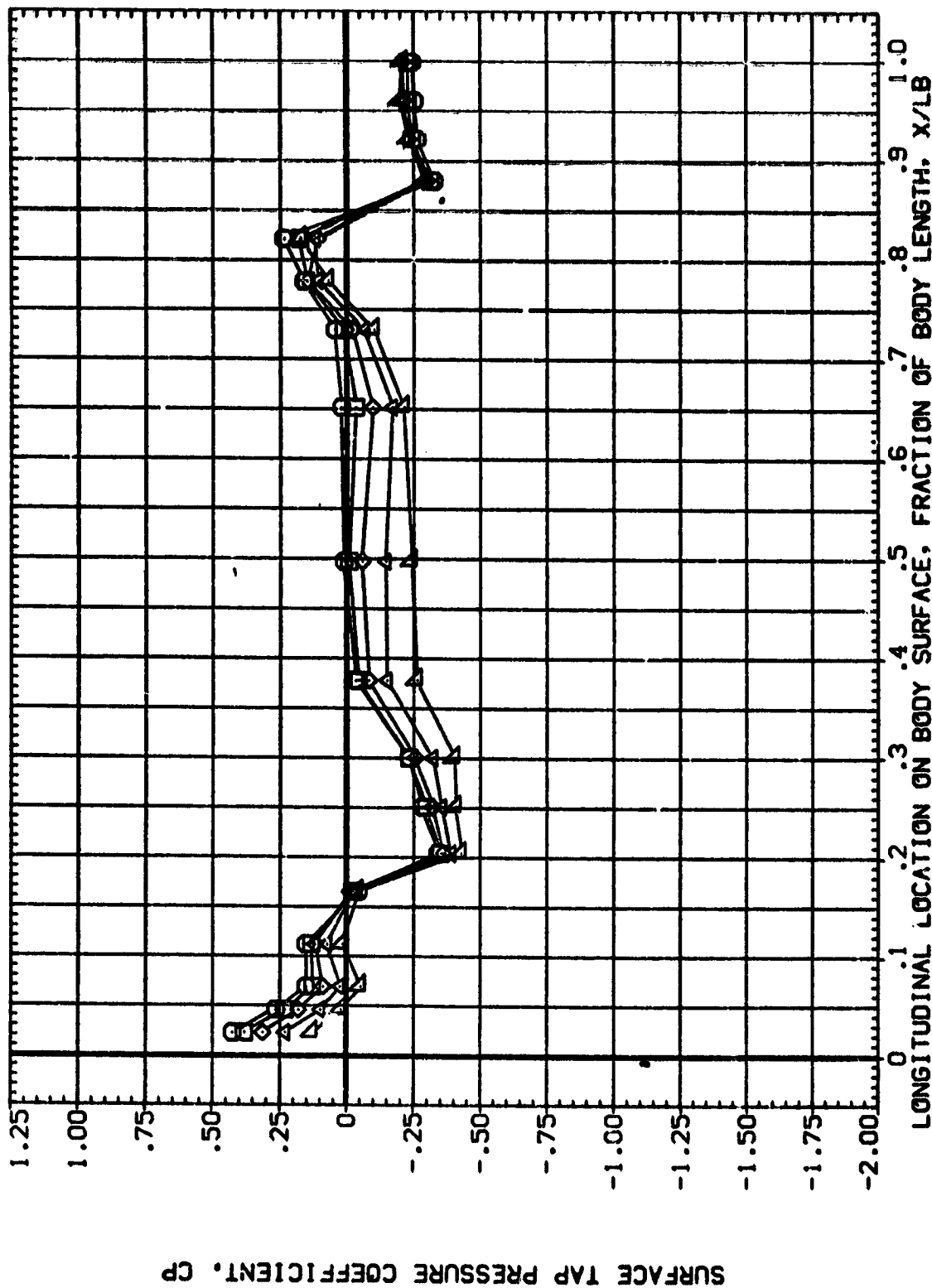


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B17)

SYMBOL	ALPHA	PHI	BETA		PARAMETRIC VALUES
○	-4.000	150.000	.000	RUDER	.000
□	.000			BOFLAP	.000
◇	4.000			R-ELVN	.000
△	8.000				L-ELVN
	12.000				MACH
					35.000
					.000
					.500

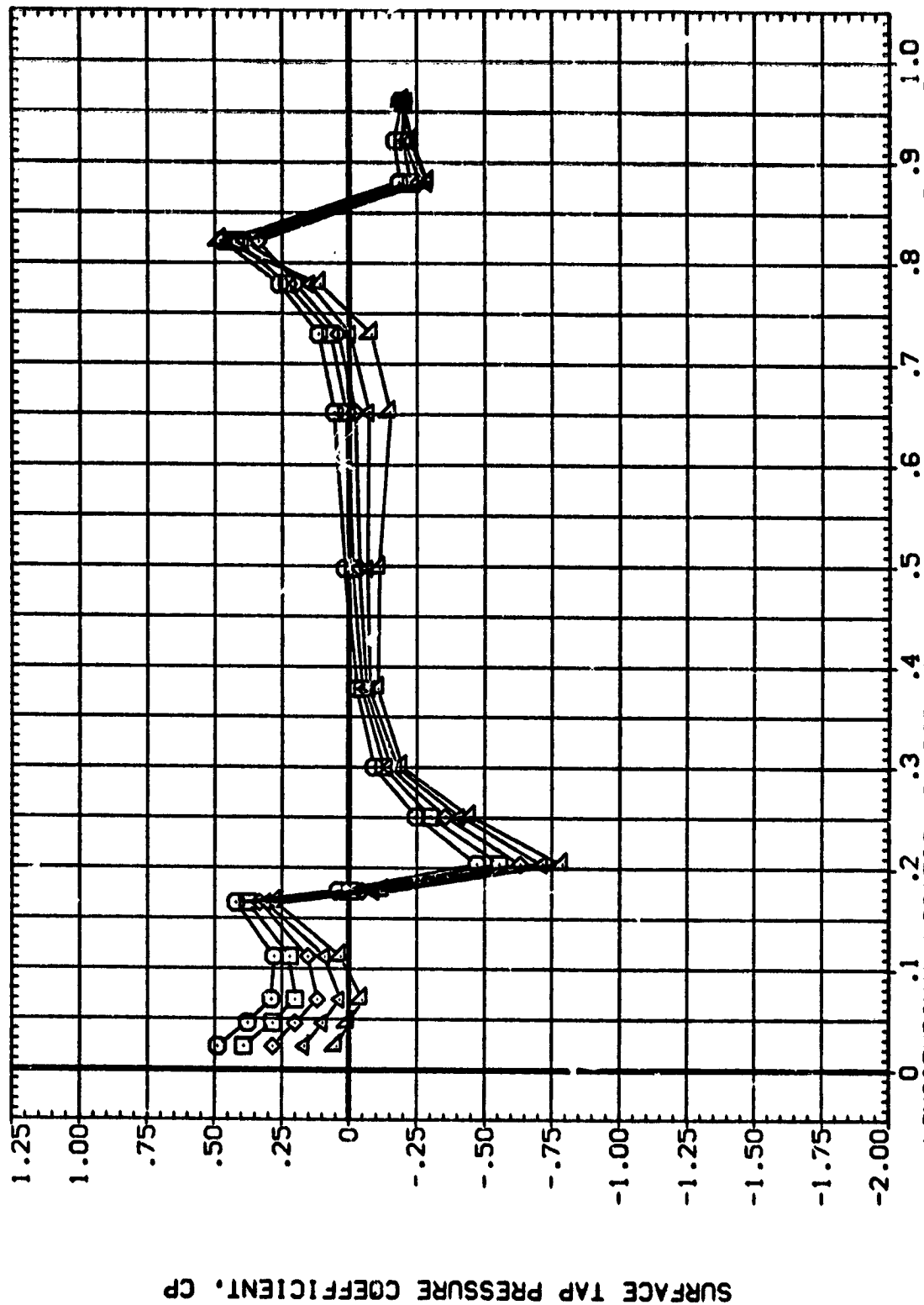


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-0730GA148: -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES
□	-4.000	.000	4.000				SPDBRK .000
◇	.000	.000					L-ELVN .000
△	4.000						MACH .600
▽	8.000						
▽	12.000						

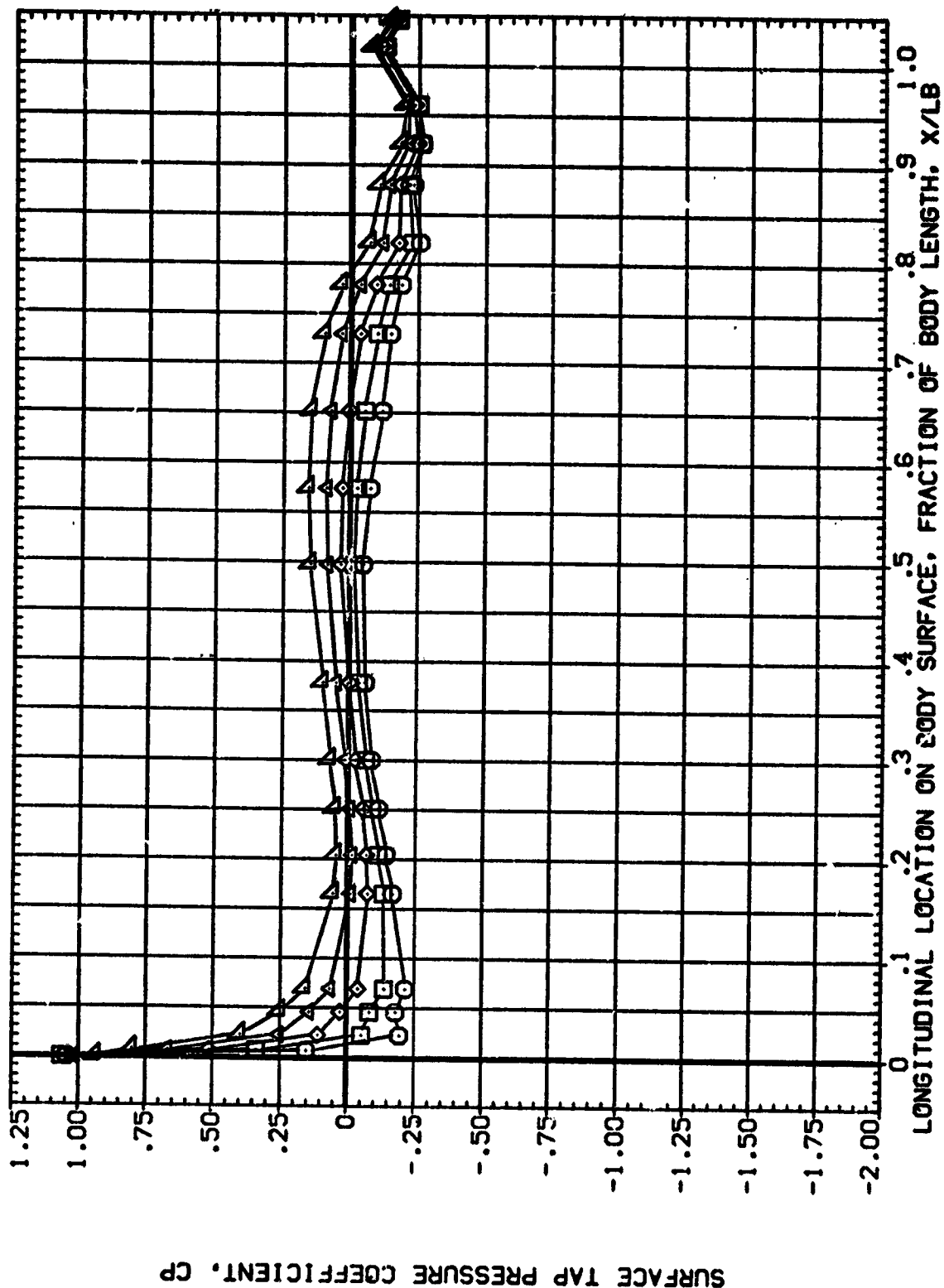


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI

BETA

40.000

4.000

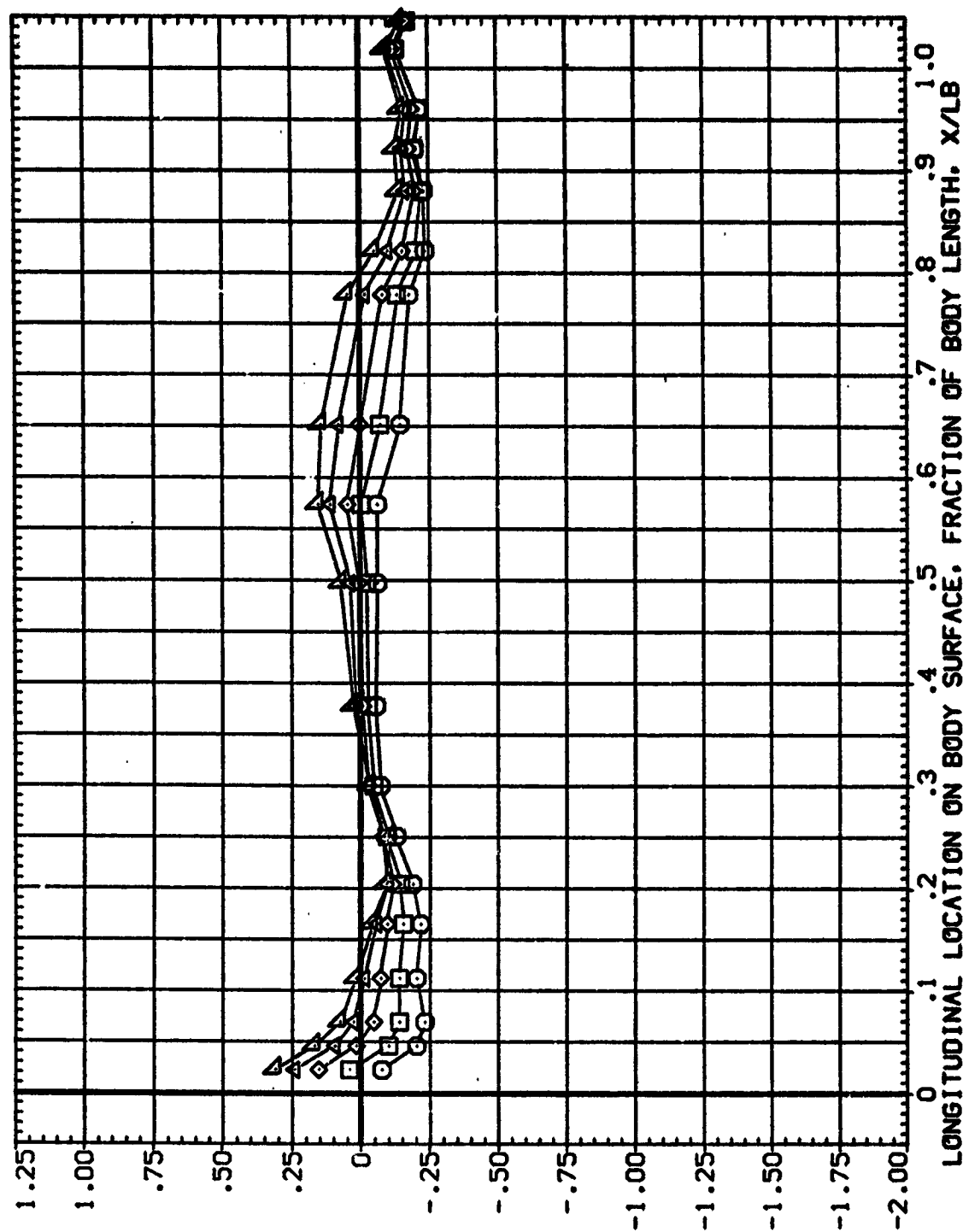
PARAMETRIC VALUES

RUTTER
 BOFLAP
 R-ELVN

.000
 .000
 .000

L-ELVN
 MACH

35.000
 .000
 .600



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 90.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN. .000

SPDRK 35.000
 L-ELVN .000
 MACH .500

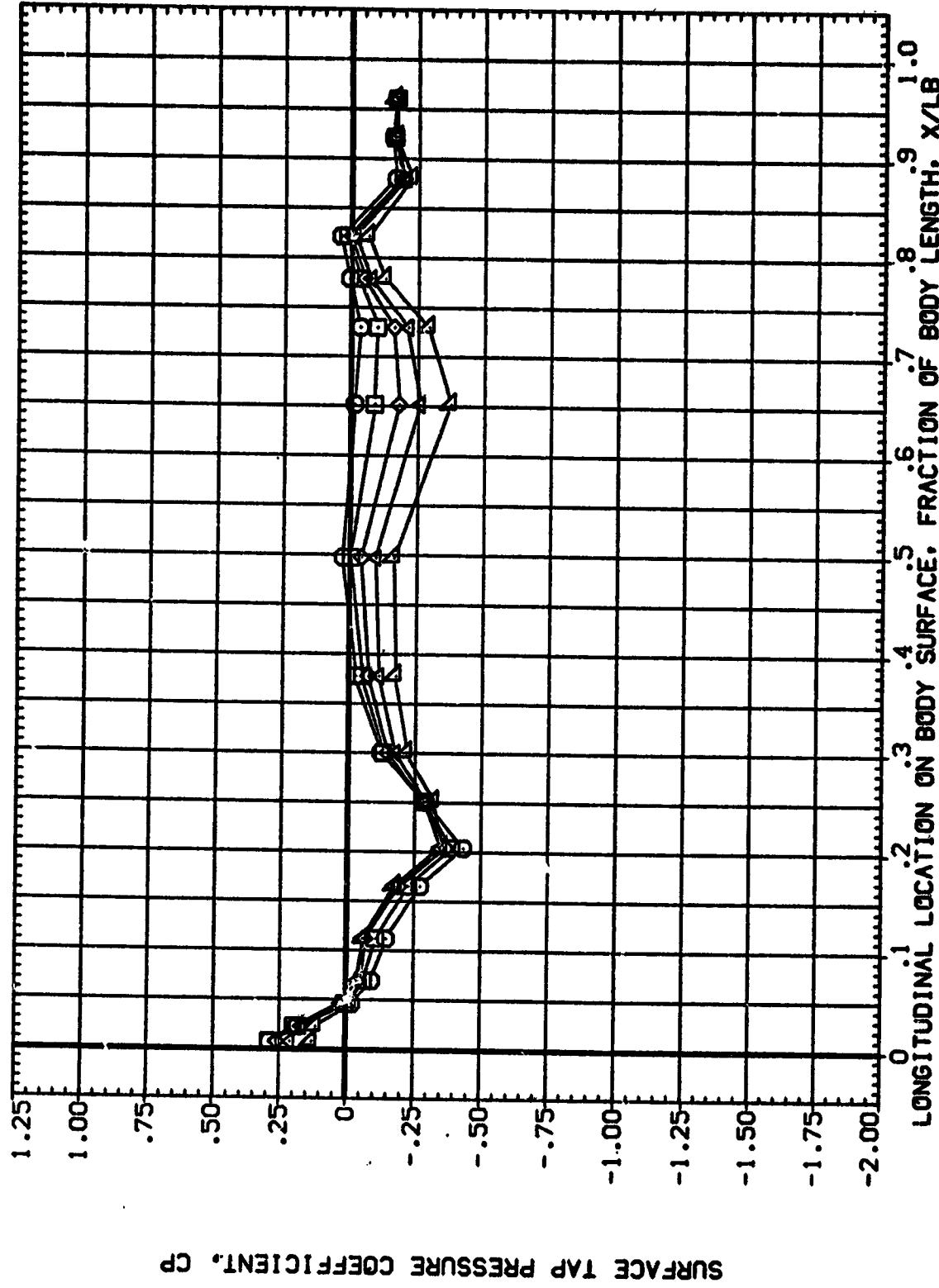


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL ALPHA PHI BETA
 ○ -4.000 120.000 4.000
 □ .000
 ◇ 4.000
 △ 8.000
 ▽ 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

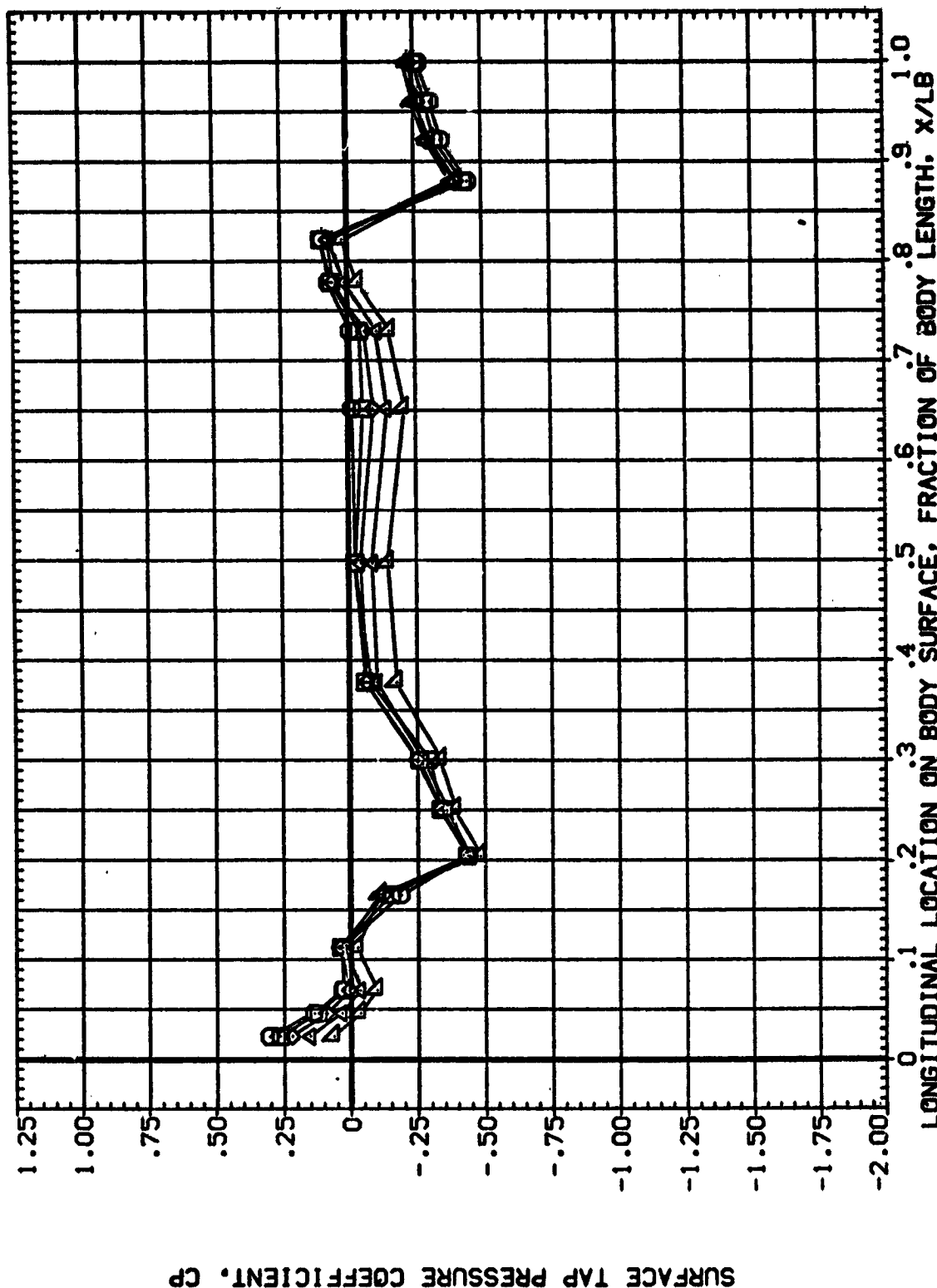


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B17)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
150.000

BETA
4.000

PARAMETRIC VALUES

RUDDER
80FLAP
R-ELVN

.000
.000
.000

SFCGRK
L-ELVN
MACH

35.000
.000
.600

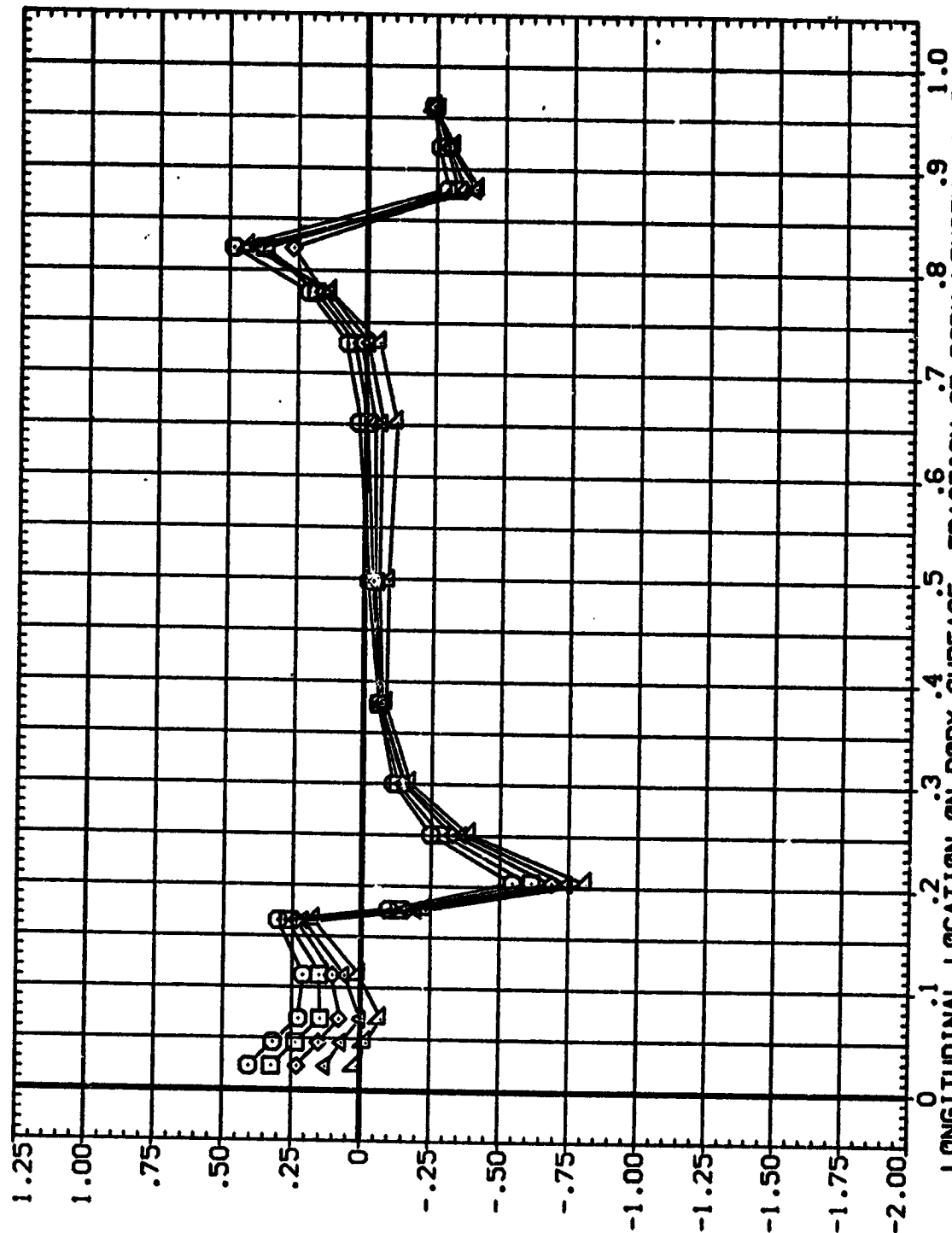


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
▽	-4.000	180.000	4.000	RUDDER .000 SPURSK 35.000
◇	.000			80FLAP .000 L-ELVN .000
□	4.000			R-ELVN .000 NACH .000
△	8.000			
▽	12.000			

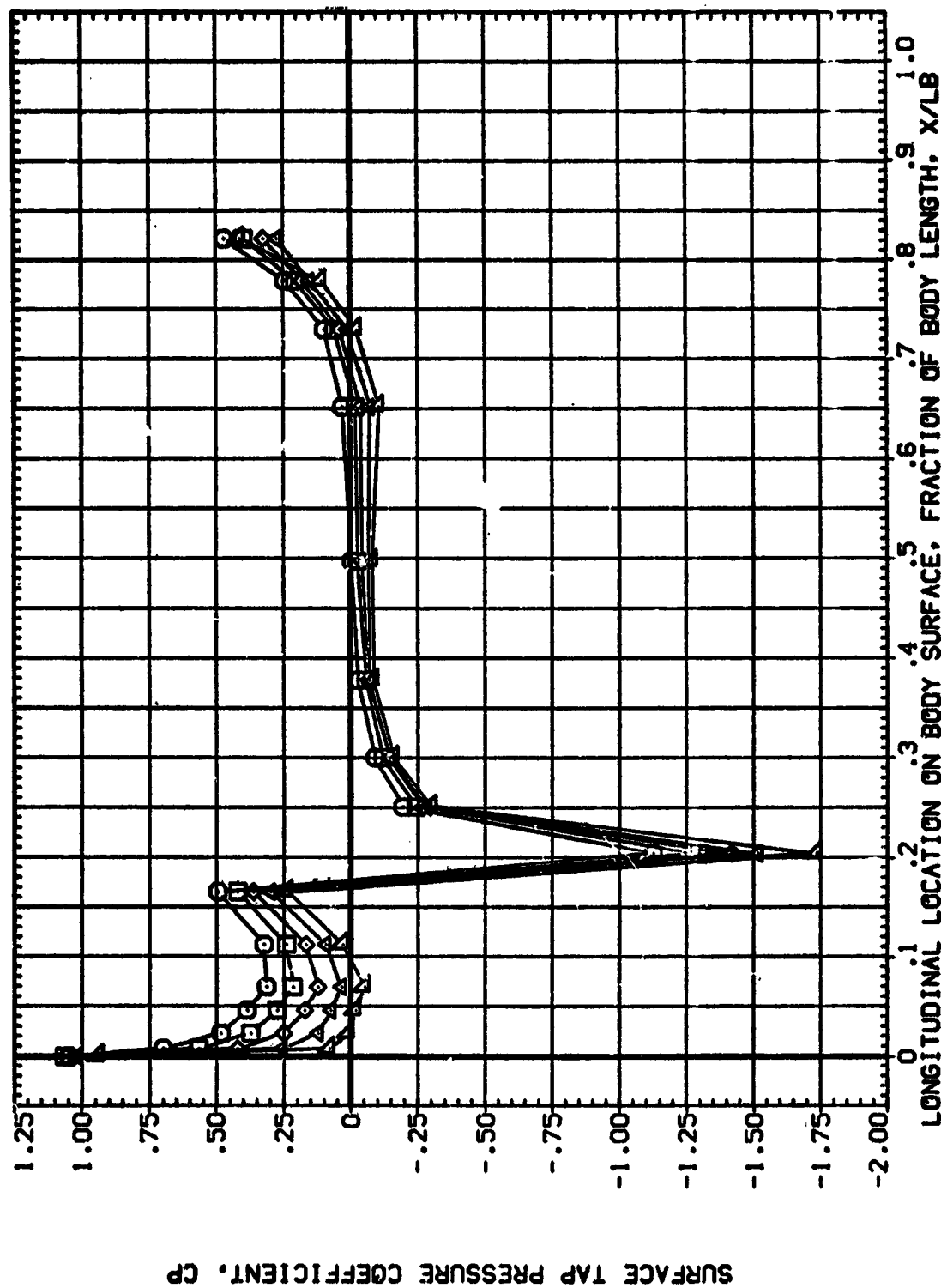


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B17)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.000	8.000	BOFLAP	.000 SPDRK
◇	.000	.000	.000	R-ELVN	.000 L-ELVN
□	4.000	.000	.000		.000 MACH
△	8.000	.000	.000		.000
▽	12.000	.000	.000		.600

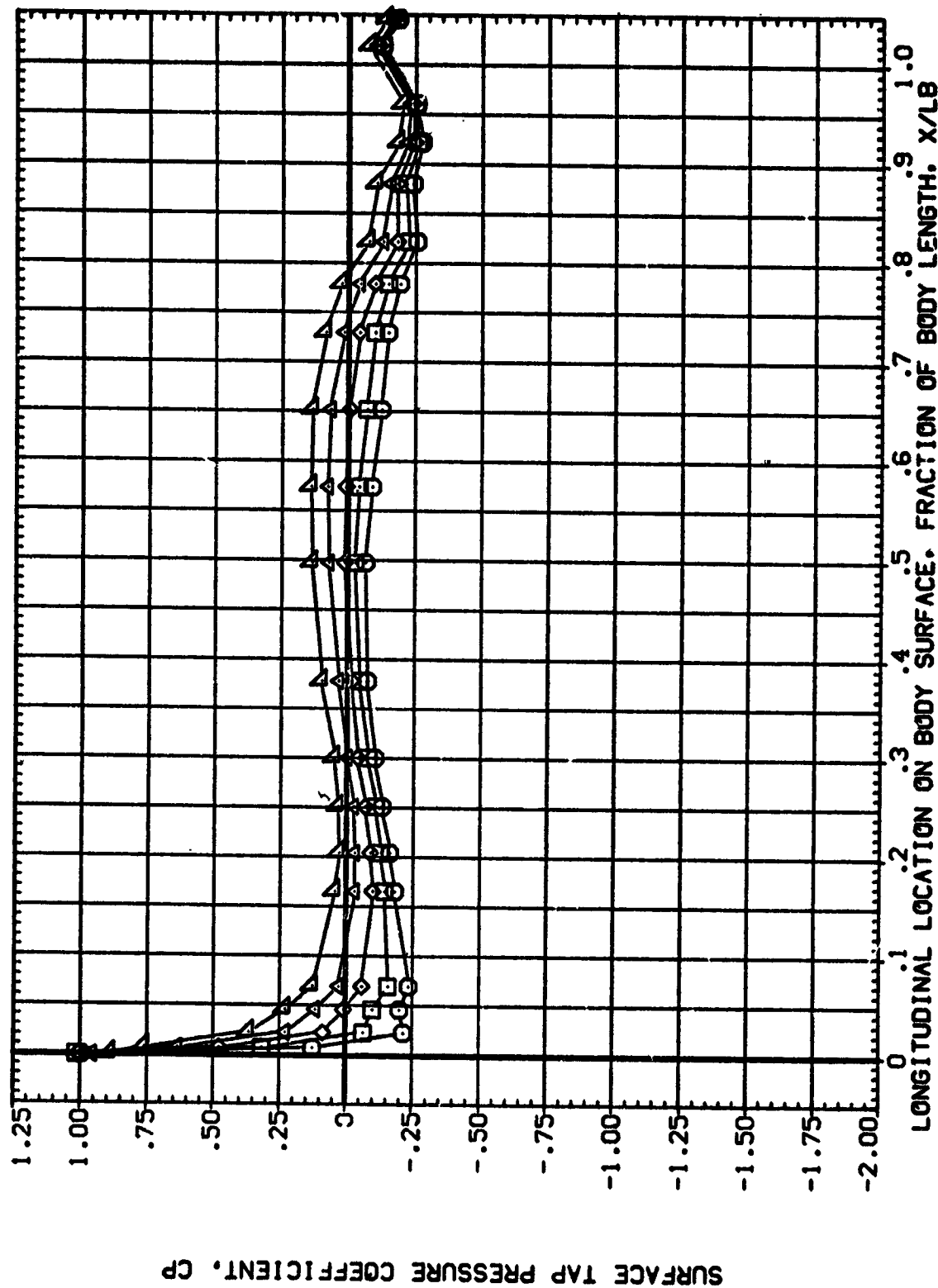


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

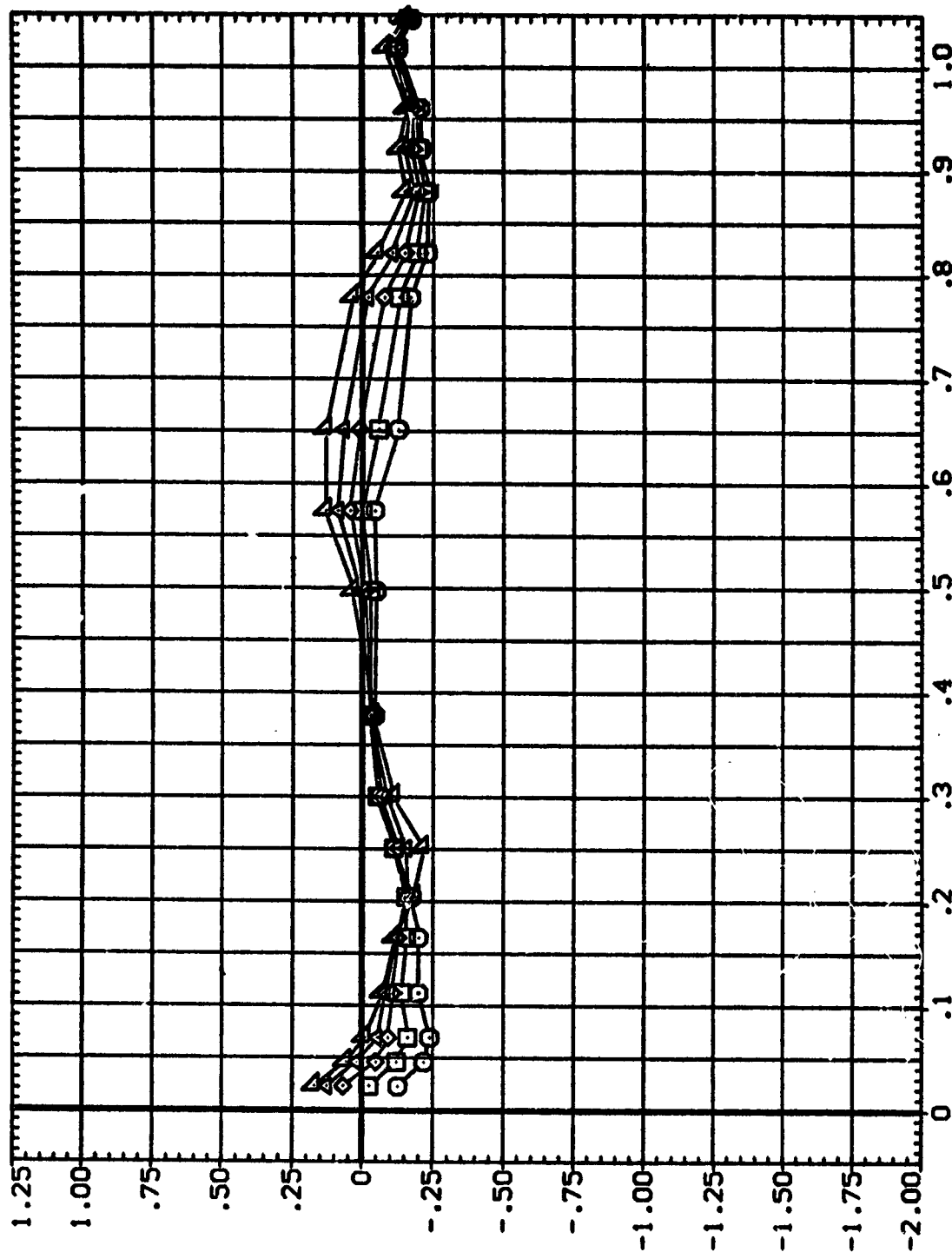
PHI
 40.000

BETA
 8.000

RUDDER
 BDFLAP
 R-ELW

PARAMETRIC VALUES
 .000 SPDRK
 .000 L-ELW
 .000 MACH

35.000
 .000
 .500



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B17)

SYMBOL
▽◇□

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
90.000

BETA
8.000

RUDDER
BDFLAP
R-ELVN

PARAMETRIC VALUES
.000 SPDBRK
.000 L-ELVN
.000 MACH

35.000
.000
.600

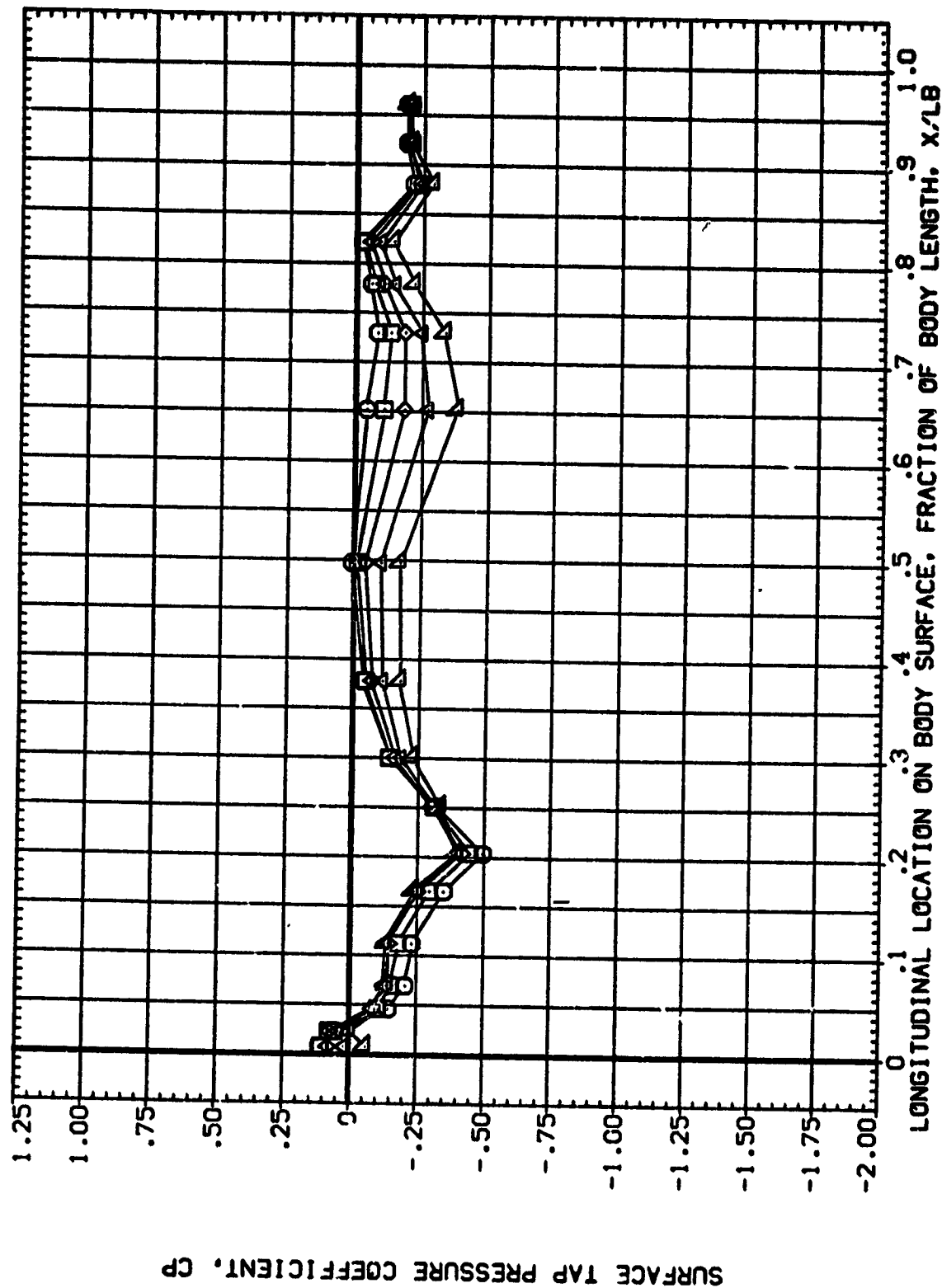


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL

ALPHA
-4.000
-8.000
12.000

PHI
120.000

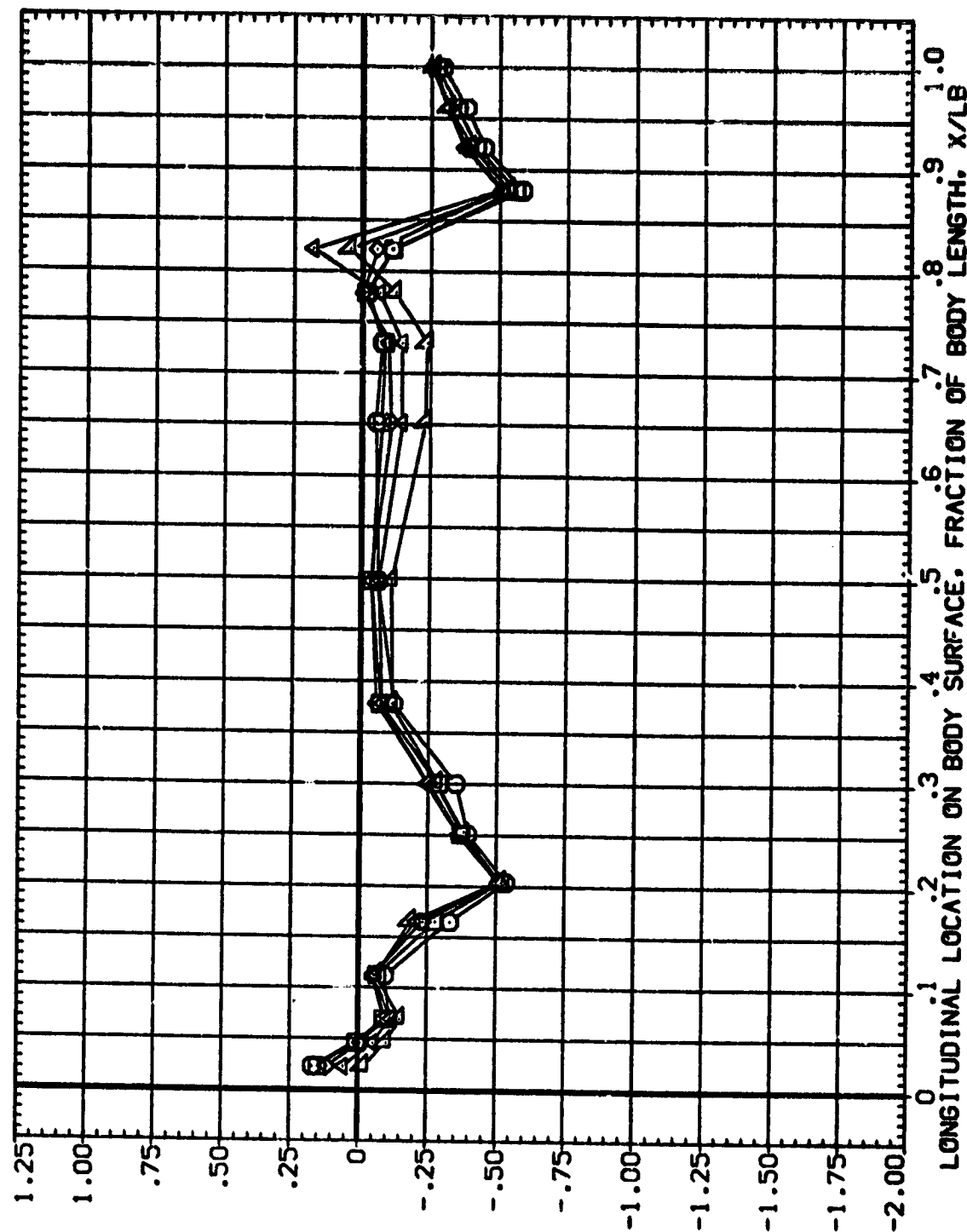
BETA
8.000

△
◇
□
○

RUDDER
BOFLAP
R-ELVN

PARAMETRIC VALUES
.000
.000
.000

SPDRBK
L-ELVN
MACH
35.000
.000
.500



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-G73(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B17)

SYMBOL	ALPHA	PHI	BETA	RUDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRMT	L-ELVN	MACH
▽	-4.000	150.000	8.000	.000	.000	.000	.000	.000	.000	.500
◇	.000			.000	.000	.000	.000	.000	.000	
□	4.000			.000	.000	.000	.000	.000	.000	
△	8.000			.000	.000	.000	.000	.000	.000	
▽	12.000			.000	.000	.000	.000	.000	.000	

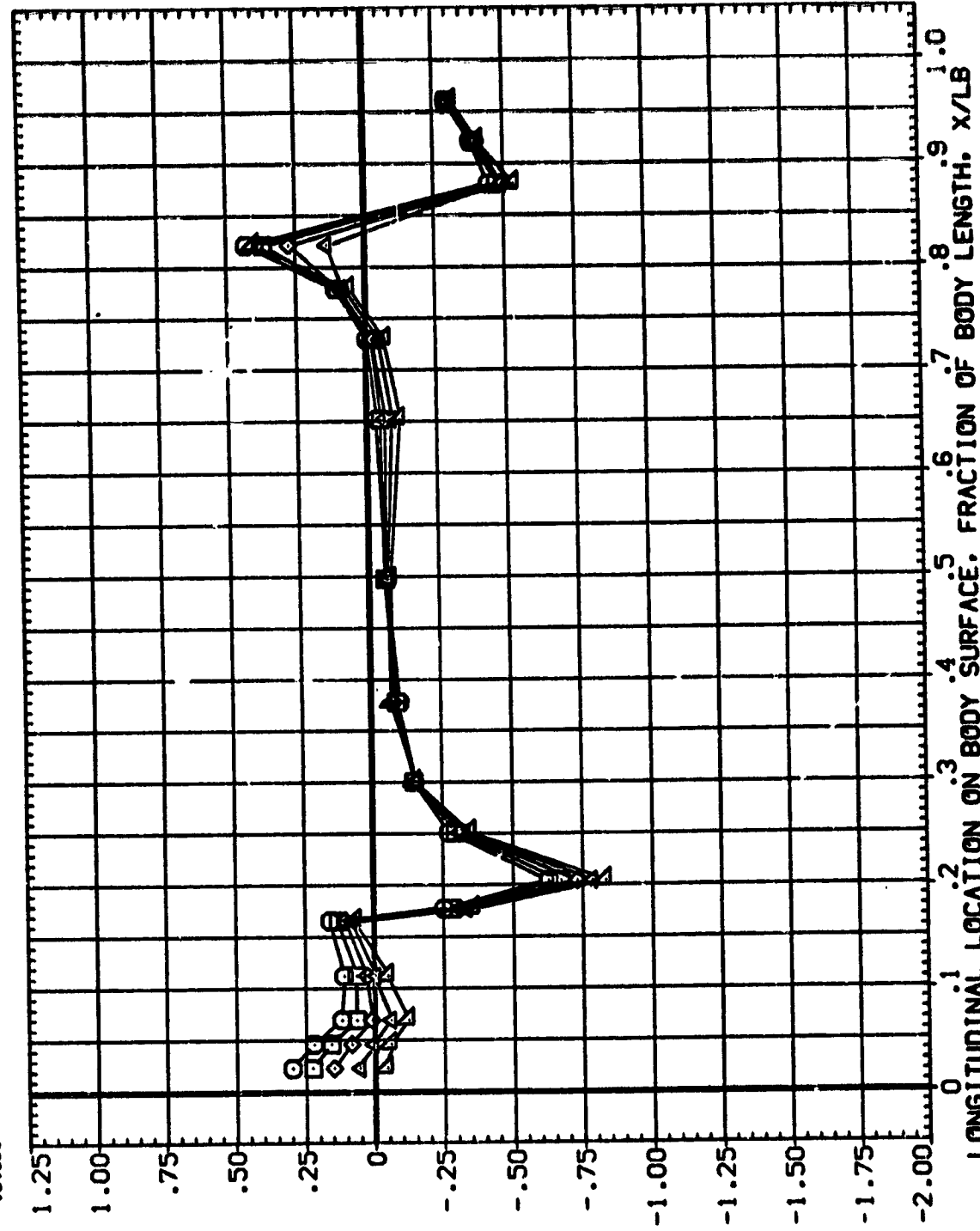


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

(1E8B17)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
180.000

BETA
8.000

PARAMETRIC VALUES

RUDDER
80-FLAP
R-ELVN

.000
.000
.000

SPDRX
L-ELVN
NACH

.000
.000
.000

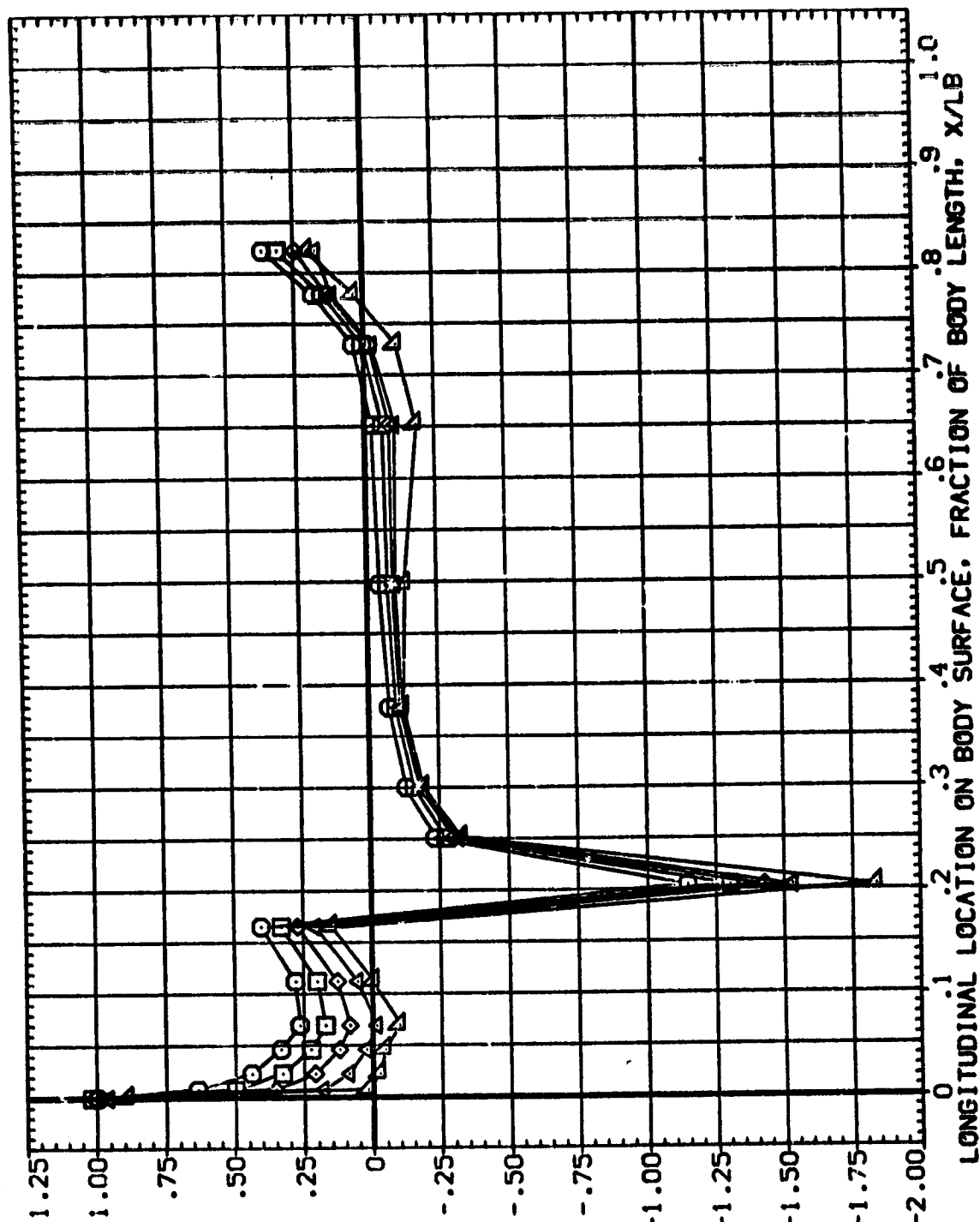


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B16)

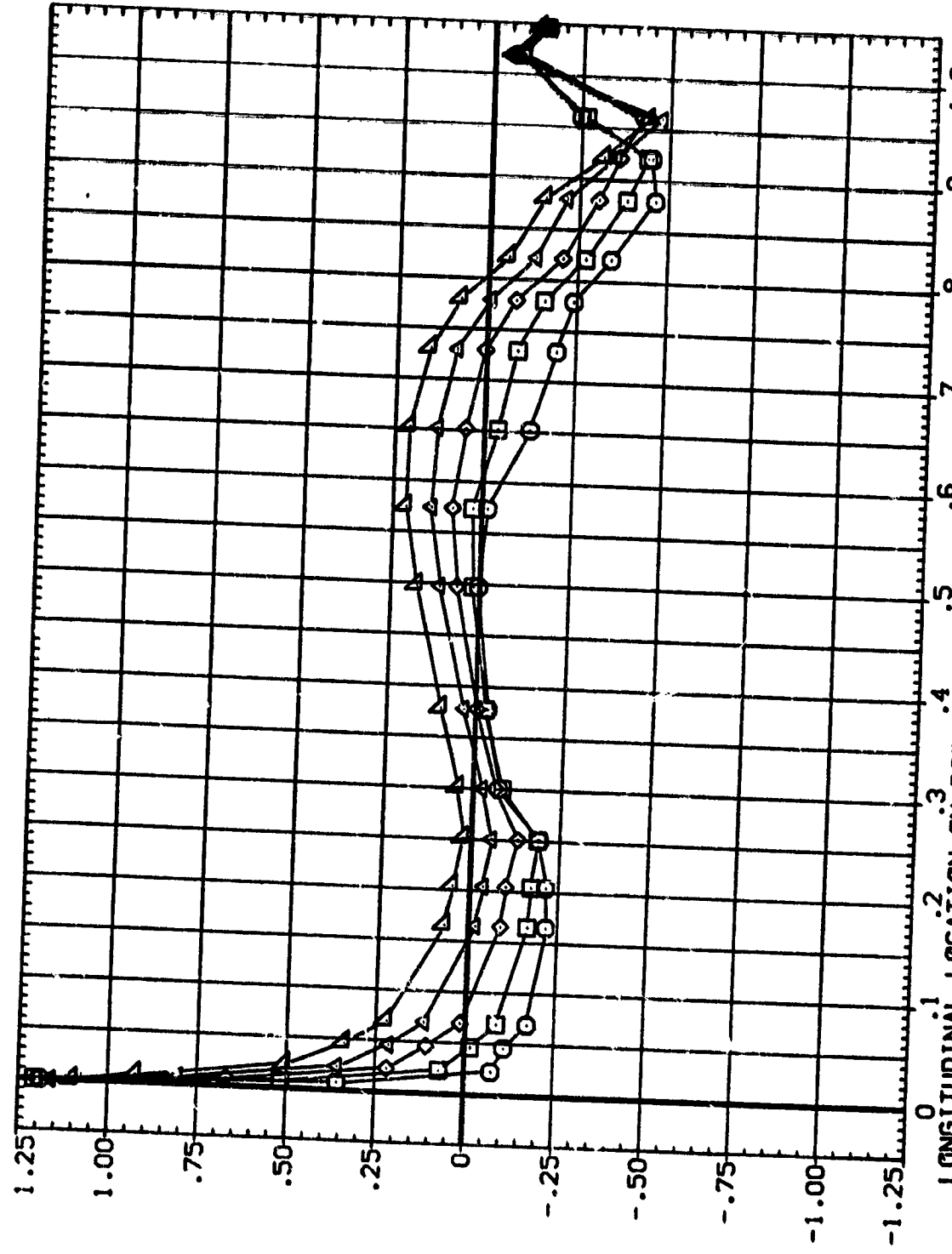
SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI .000

BETA -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRWK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL	ALPHA	PHI	BETA	GEOMETRIC VALUES
▽	-4.000	40.000	-4.000	RUDDER
◇	.000			80% JC
□	.000			100% JC
△	1.000			1000 MACH
	12.000			35.000
				.000
				.000
				.000

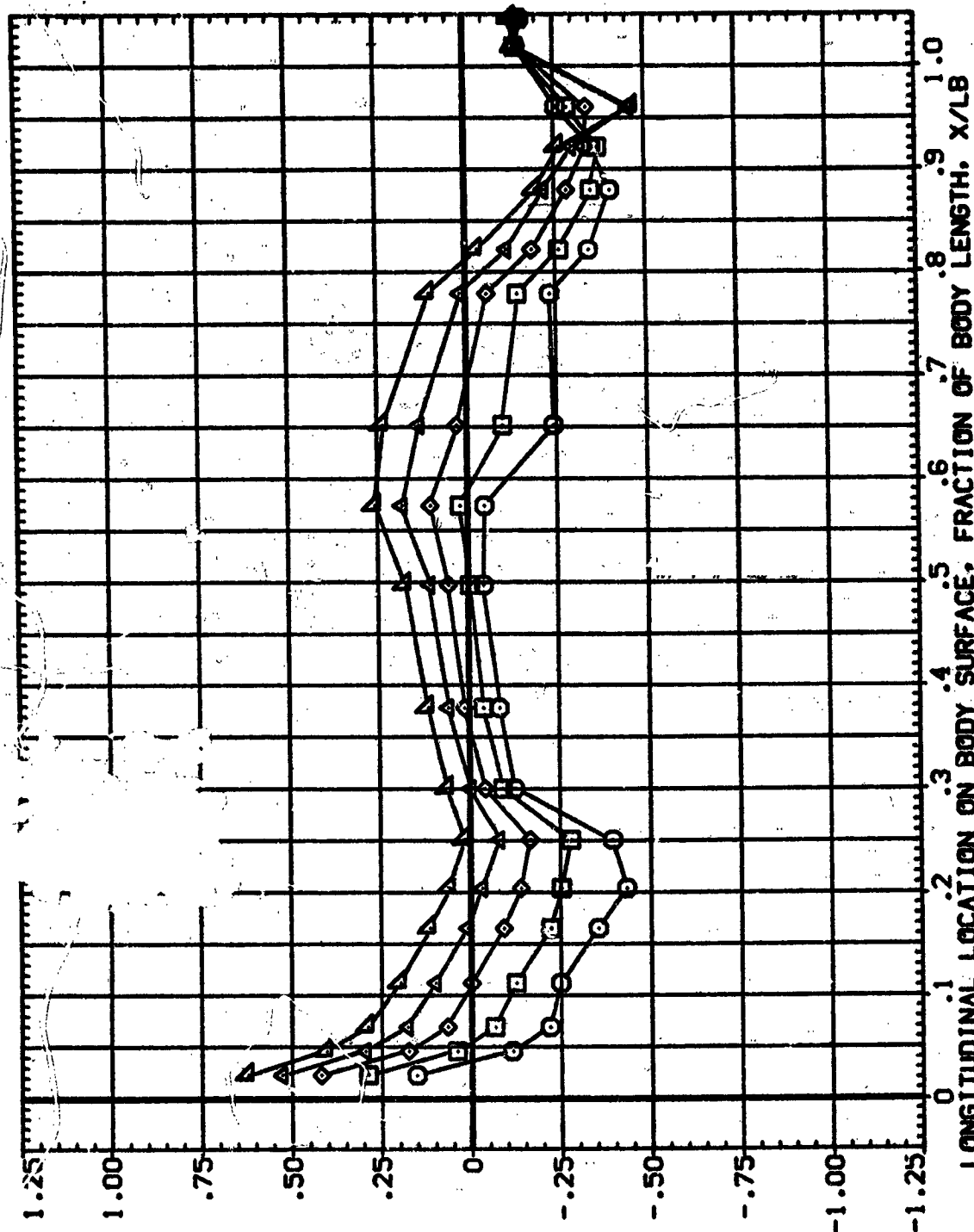


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(918831)

SYMBOLS

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI 90.000

BETA
-4.000

RUDDER
BOFLAP
R-ELVN

PARA .000
PARA .000
PARA .000

HIGH
 RATE-1
 SPREADS
 INTVA DIS

3.3.3

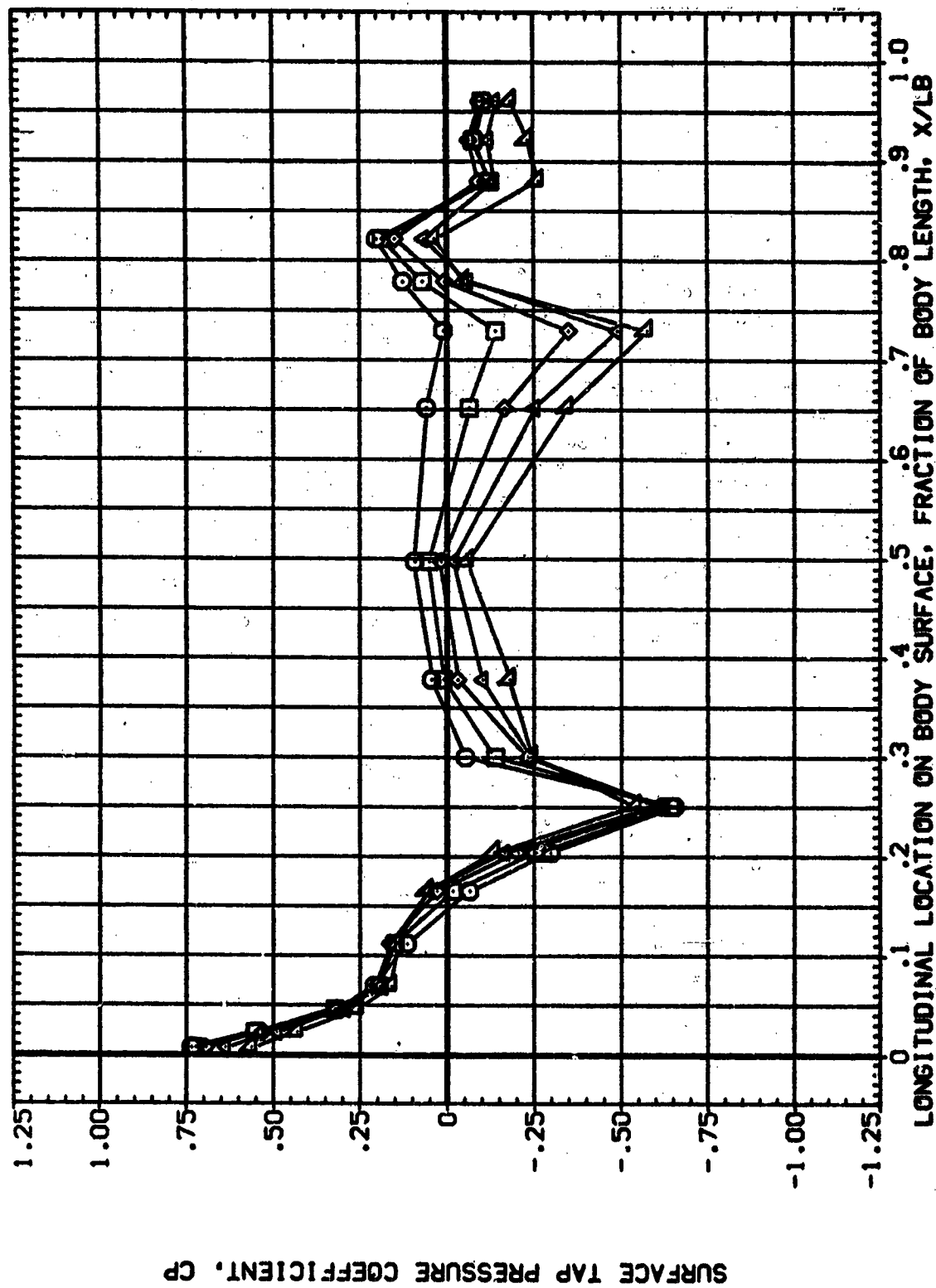
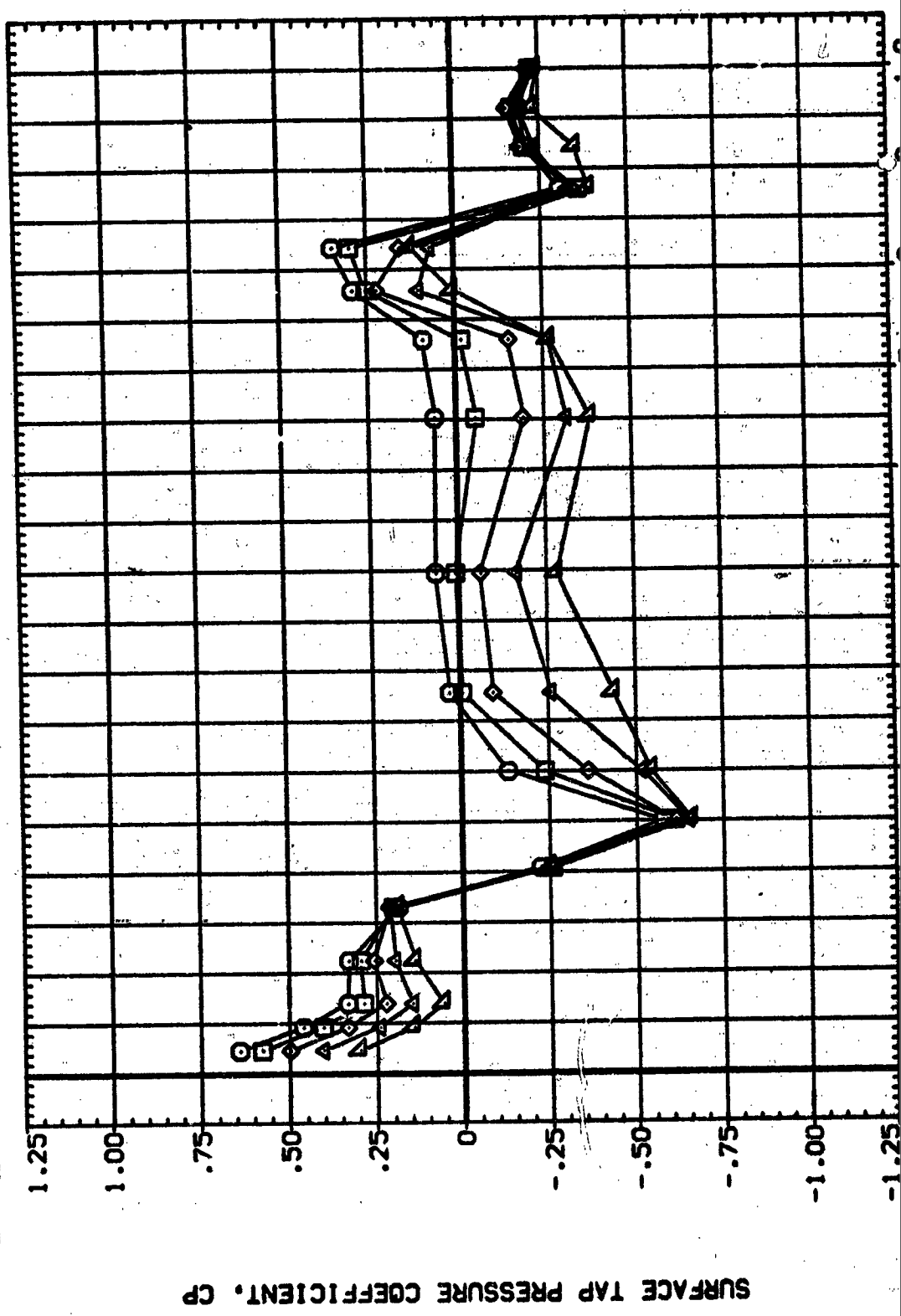


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽ ◆ ◇ □

ALPHA PHI BETA
 -4.000 120.000 -4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 .000 SPDRN 35.000
 .800 L-ELVN .000
 .000 R-ELVN .500



PARAMETRIC VALUES
 RUDDER .000 SPORRY 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 NACH .500

SYMBOL ALPHA PHI BETA
 -4.000 150.000 -4.000
 .000
 4.000
 8.000
 12.000

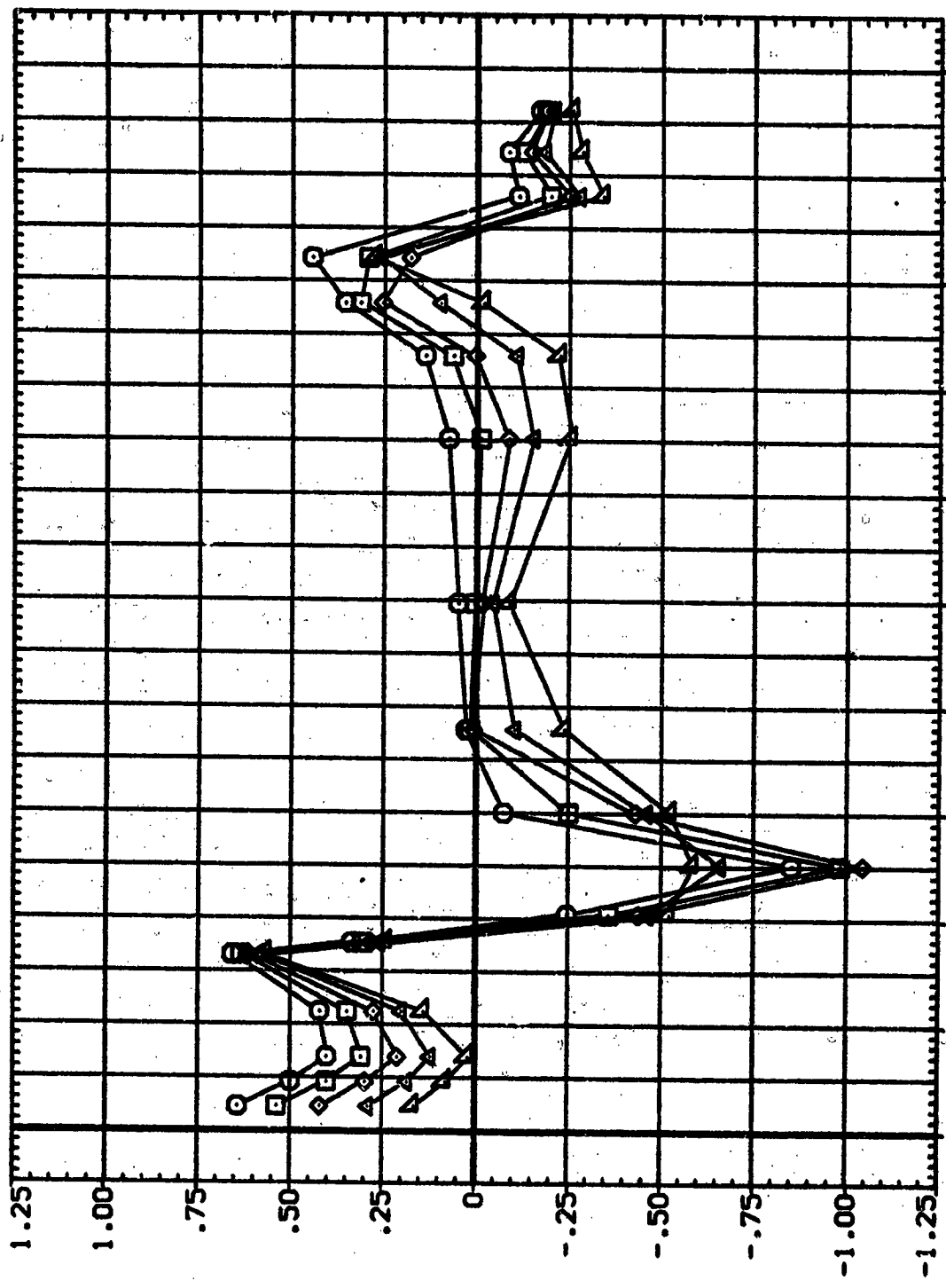


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRK .35.000
 SOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .500

SYMBOL ALPHA PHI BETA
 -4.000 180.000 -4.000
 .000
 4.000
 8.000
 12.000

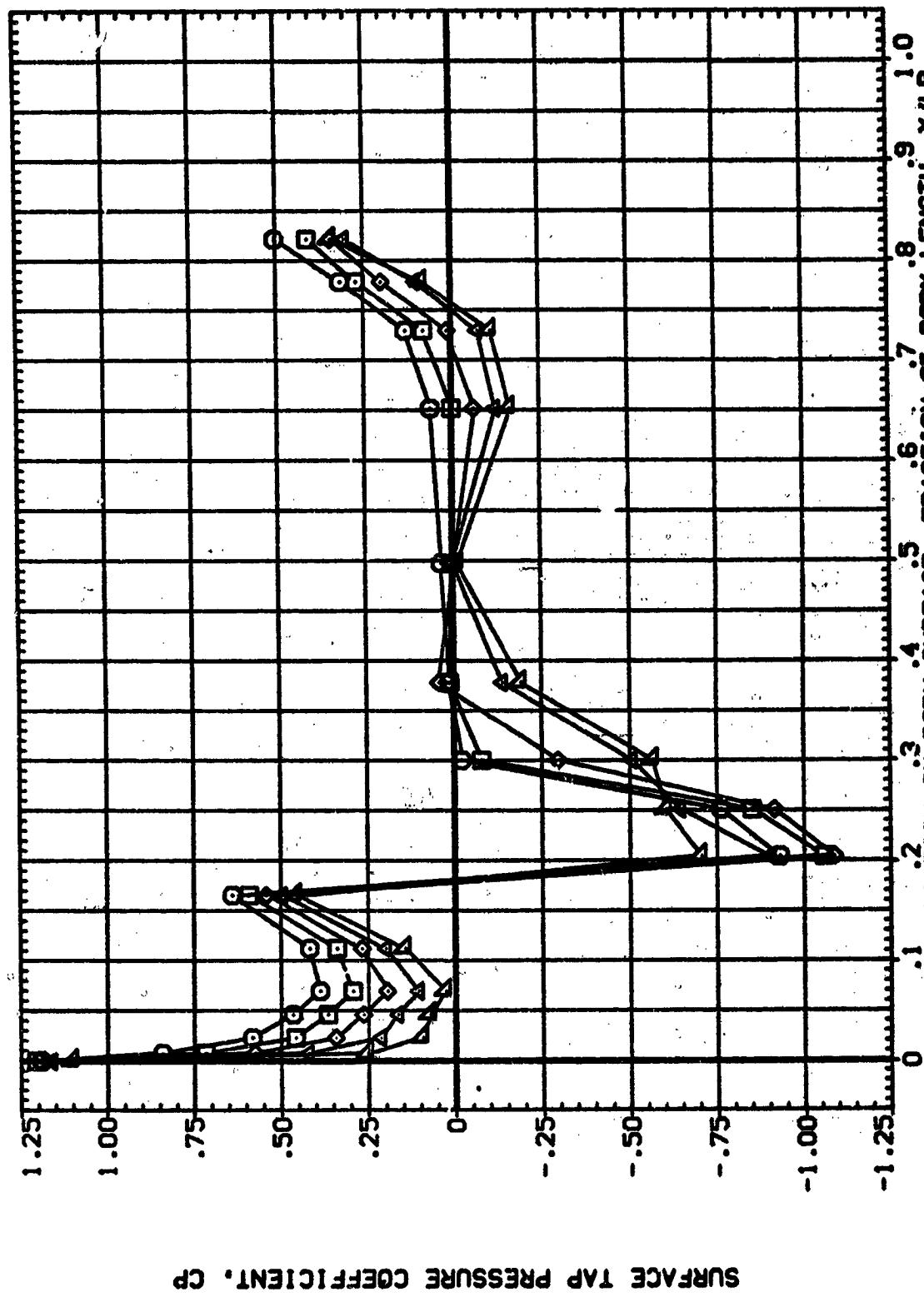


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B16)

SYMBOL	ALPHA	PHI	BETA	RUDER	SOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRK	L-ELVN	MACH
▽	-4.000	.000	.000					.000	.000	.000
◇	.000	.000	.000					.000	.000	.000
□	4.000	.000	.000					.000	.000	.000
△	8.000	.000	.000					.000	.000	.000
▽	12.000	.000	.000					.000	.000	.000

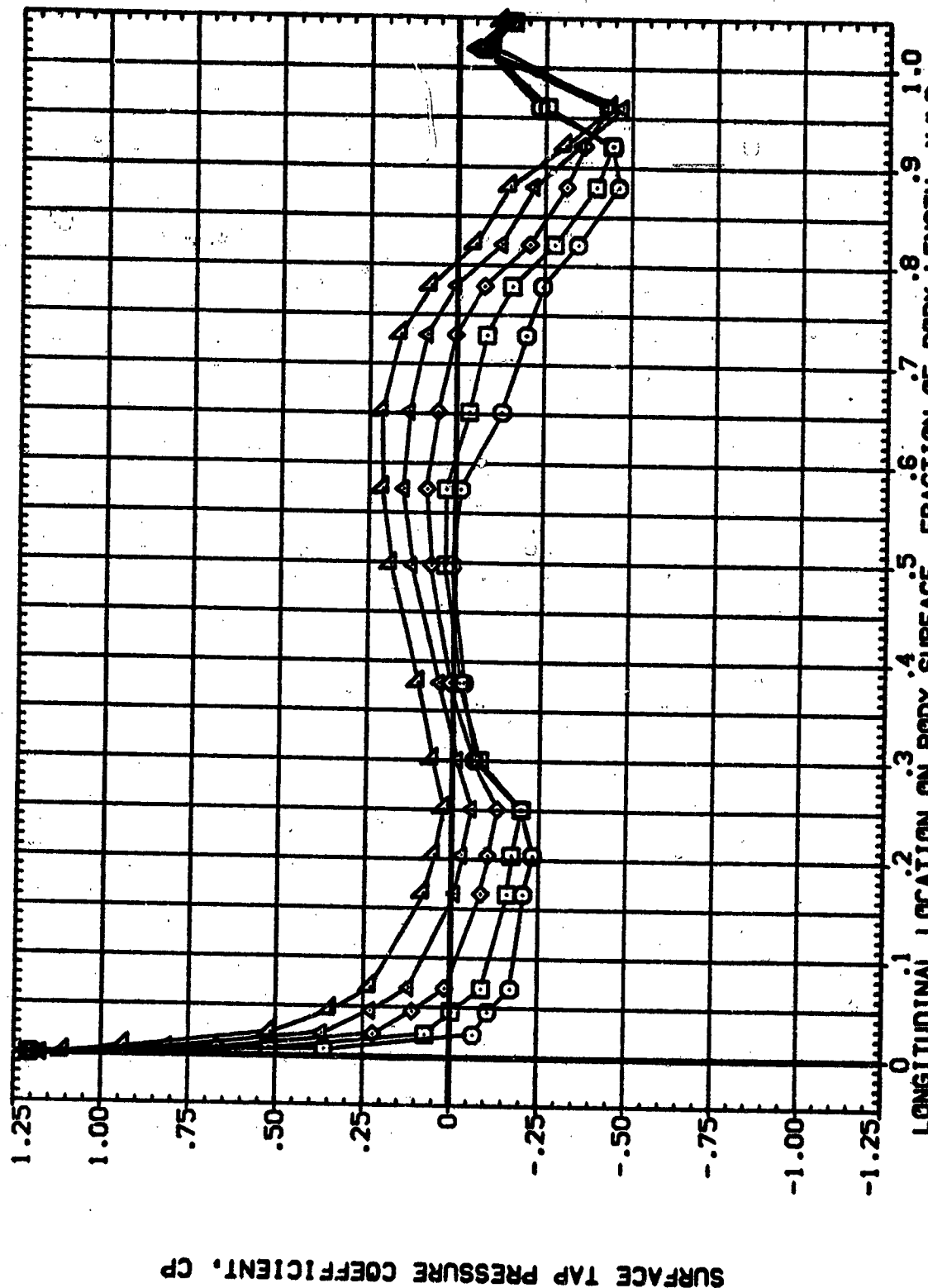


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
▽
◇
□
△

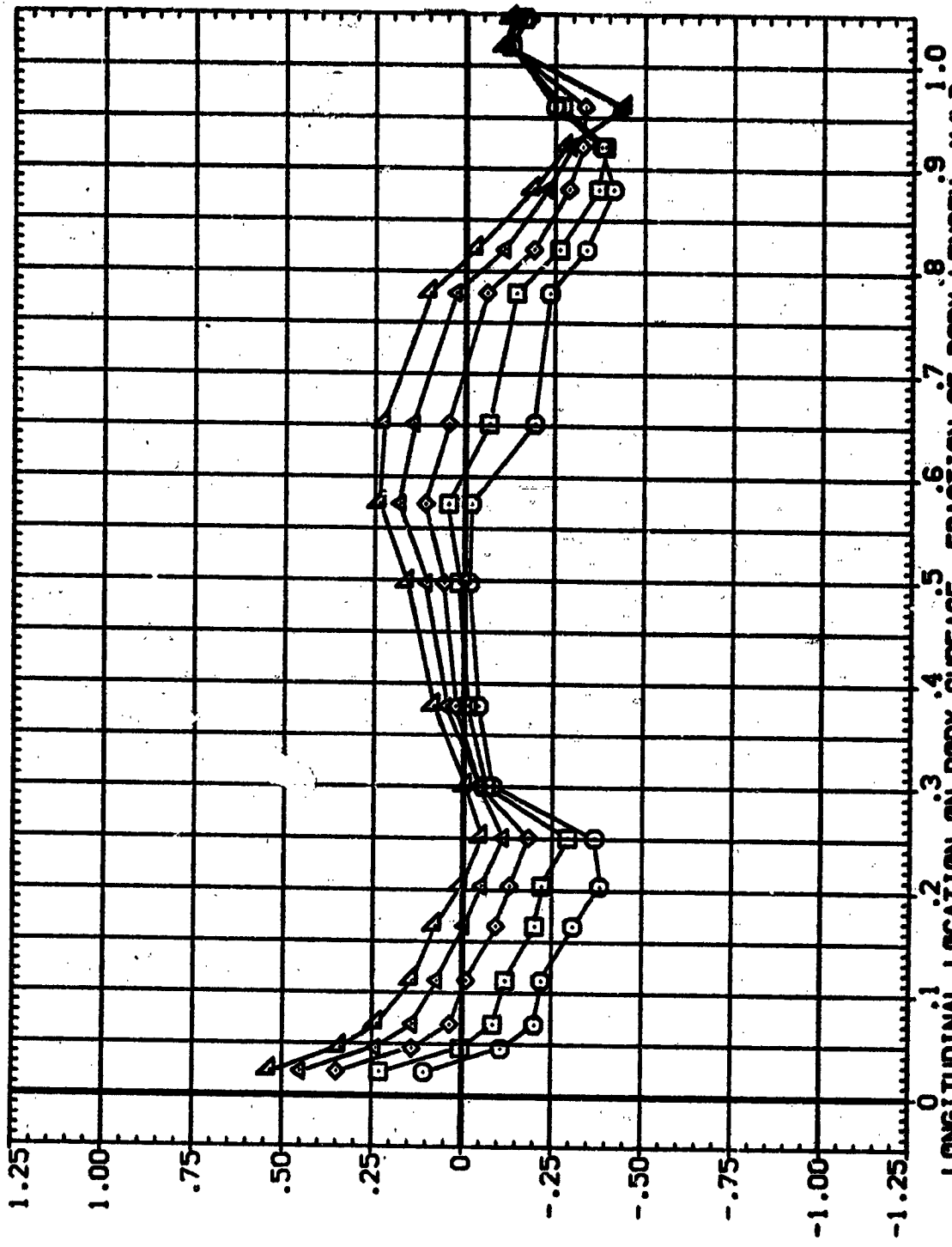
ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
40.000

BETA
.000

PARAMETRIC VALUES

RUDDER	.000	SPDRNK	35.000
BOFLAP	.000	L-ELVN	.000
R-ELVN	.000	MACH	.500



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-573(0A148) -140A/B/C/R ORB FUSELAGE (1E8B16)

SYMBOL	ALPHA	PHI	BETA	RUDDER	WING	WING	WING	WING
▽	-4.000	90.000	.000	0.000	0.000	0.000	0.000	0.000
◇	.000			0.000	0.000	0.000	0.000	0.000
□	4.000			0.000	0.000	0.000	0.000	0.000
△	8.000			0.000	0.000	0.000	0.000	0.000
▽	12.000			0.000	0.000	0.000	0.000	0.000

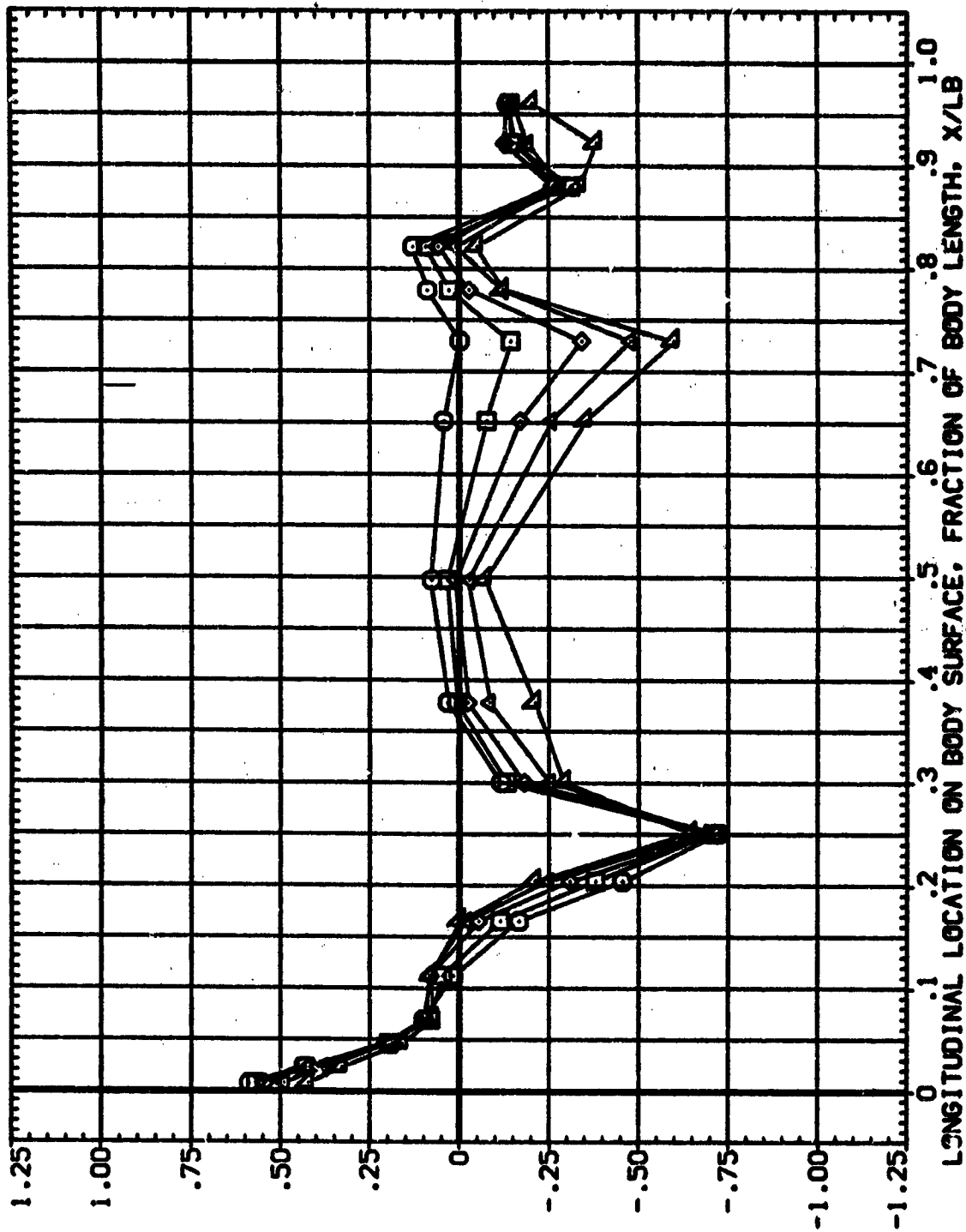


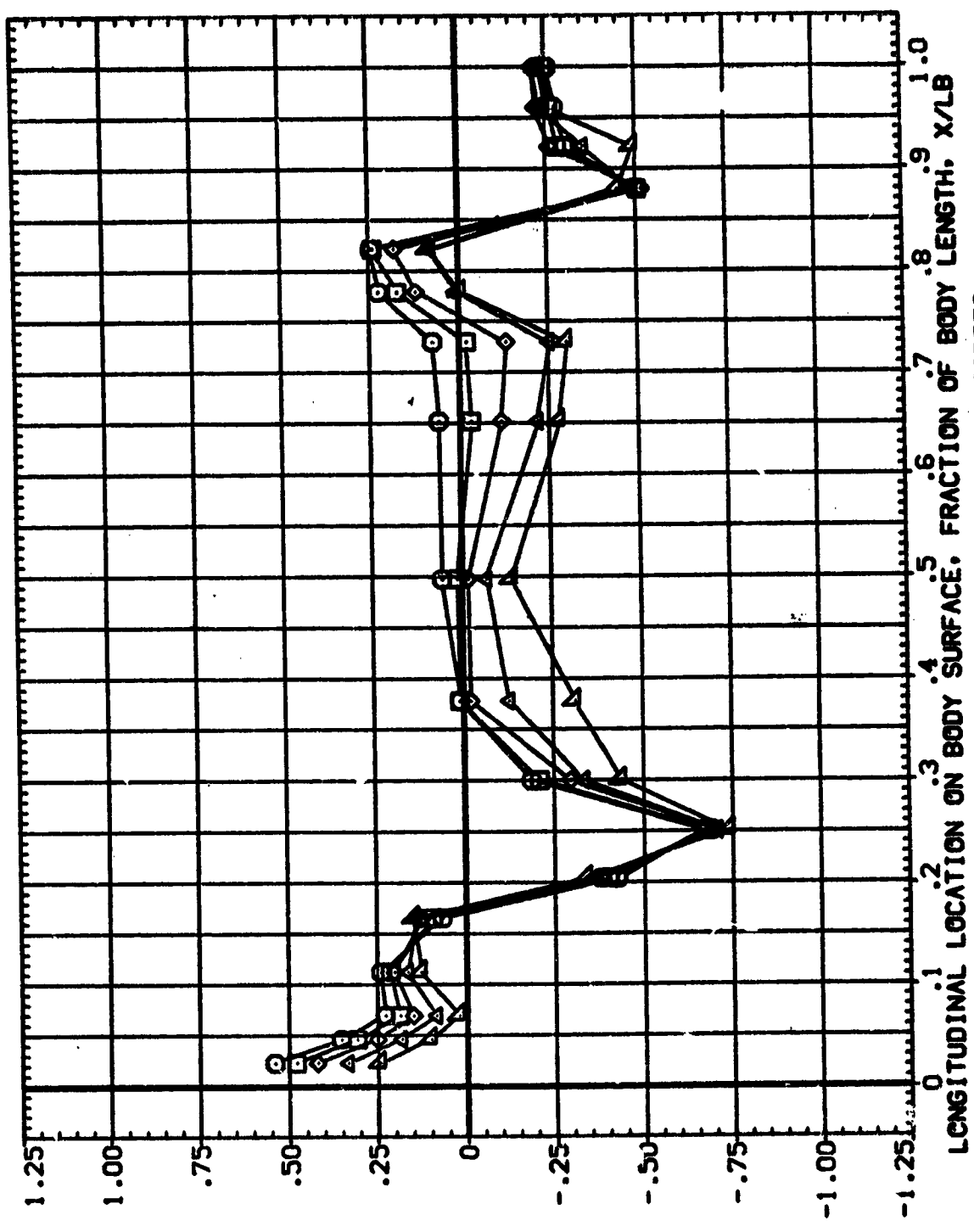
FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 .000 SPDRK 35.000
 .000 L-ELVN .000
 .000 MACH .900

RUDDEF
 BOFLAP
 R-ELVN

ALPHA PHI BETA
 -4.500 120.000 .000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ○
 □
 ◇
 △



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B16)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRNK	L-ELVN	MACH
○	-4.000	150.000	.000					.000	.000	.900
□	.000							.000	.000	.900
◇	4.000							.000	.000	.900
△	8.000							.000	.000	.900
▽	12.000							.000	.000	.900

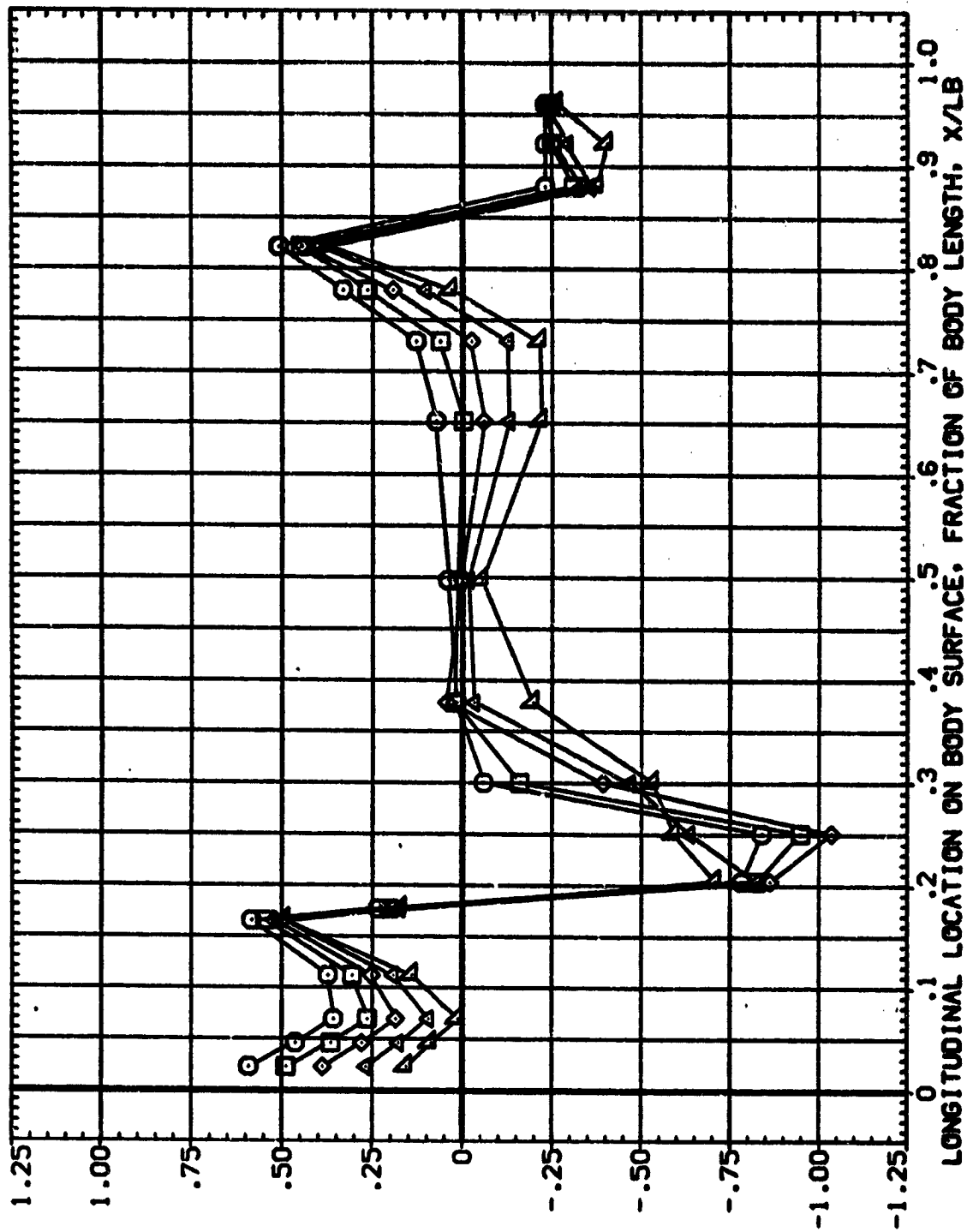


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
▽	-4.000	180.000	.000	RUDER .000 SPDRWK .000
◇	.000			BUFLAP .000 L-ELVN .000
□	4.000			R-ELVN .000
△	8.000			
	12.000			

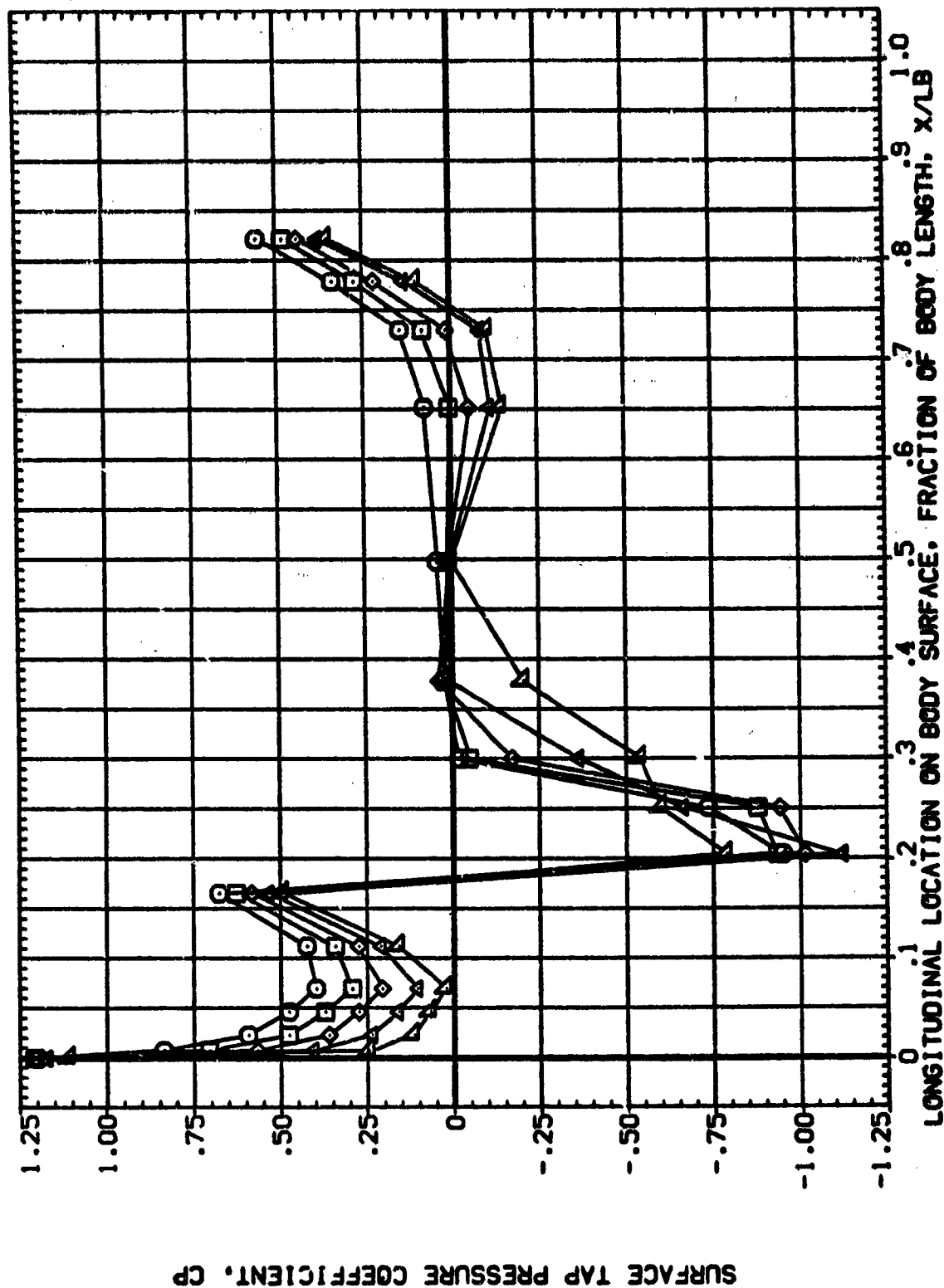


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES !1-073(0A148) -140A/B/C/R ORB FUSELAGE

Symbol □◇△△

ALPHA	PHI	BETA
-4.000	.000	4.000
.000		
4.000		
8.000		
12.000		

PARAMETRIC VALUES

R-51 VV
BOFLAP
RUDER

888

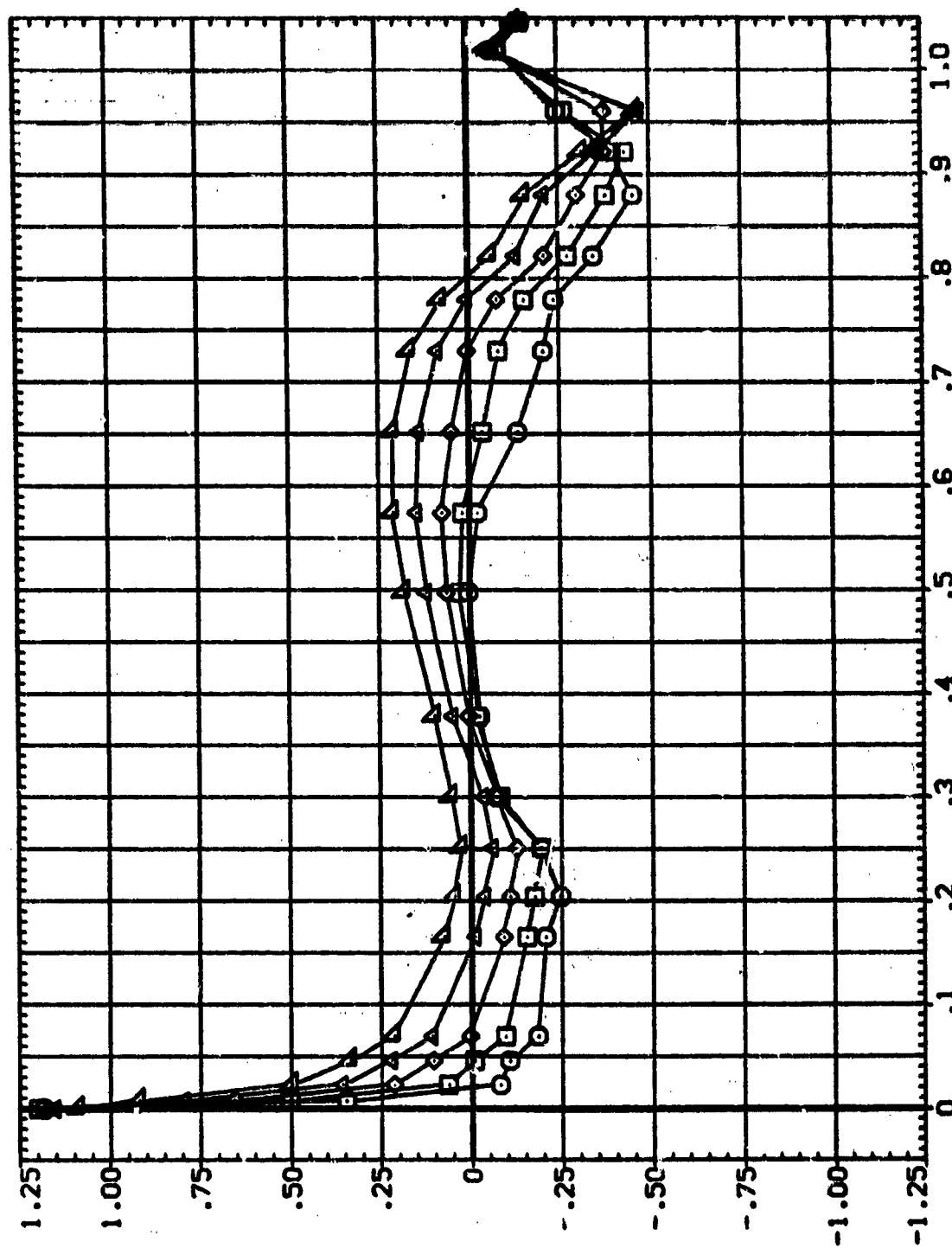


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
▽	-4.000	40.000	4.000	RUDDER .000 SPDRIN .000
◇	.000			80FLAP .000 L-ELVN .000
□	4.000			R-ELVN .000
	8.000			MACH .200
	12.000			

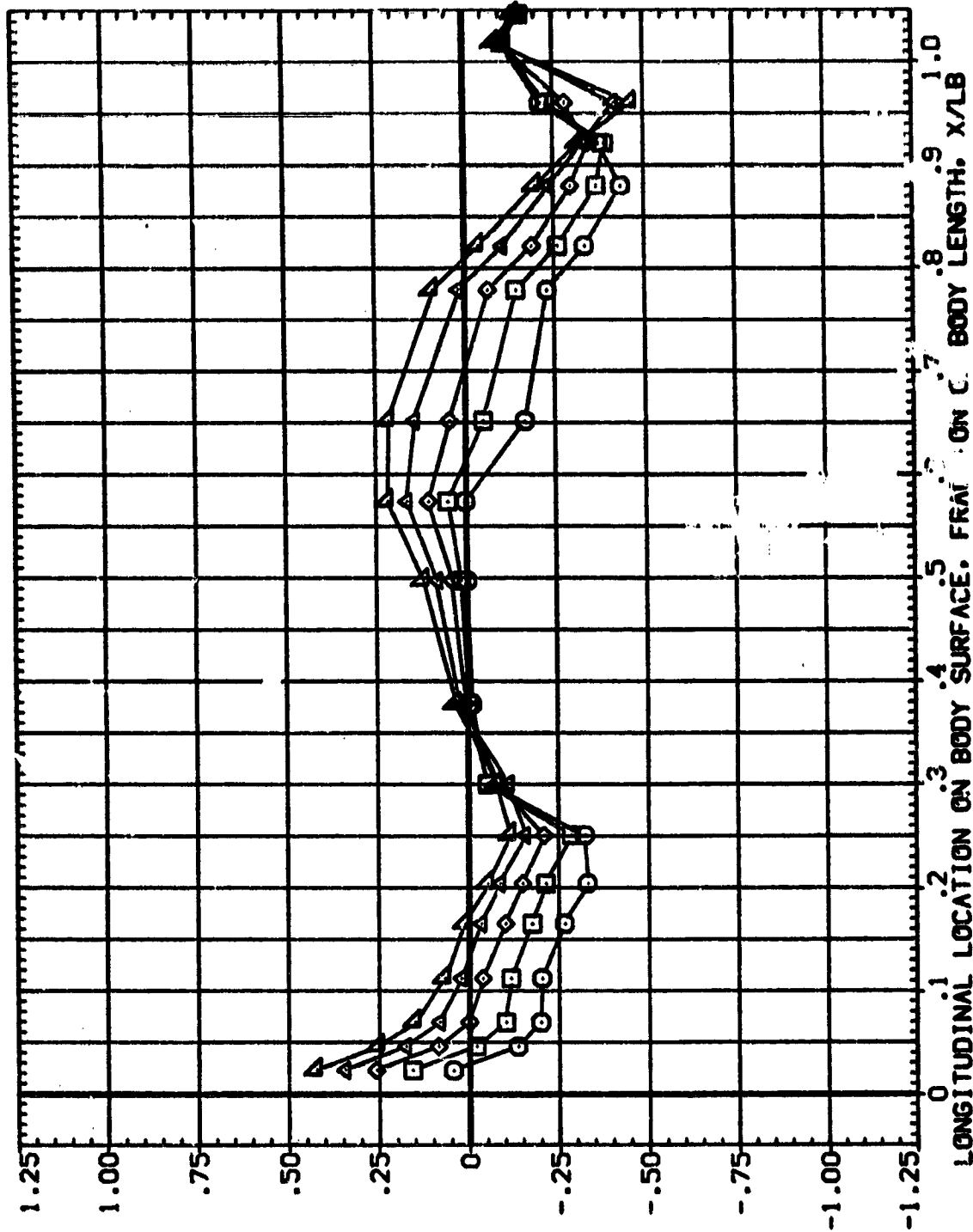


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B16)

SYMBOL	ALPHA		PHI		BETA		PARAMETRIC VALUES			
	-4.000	.000	90.000	4.000			RUDDER	SPORBN	35.000	
○							80FLAP	.000	.000	
□	4.000						R-ELVN	.000	L-ELVN	.000
◇	8.000							.000	MACH	.900
△	12.000									

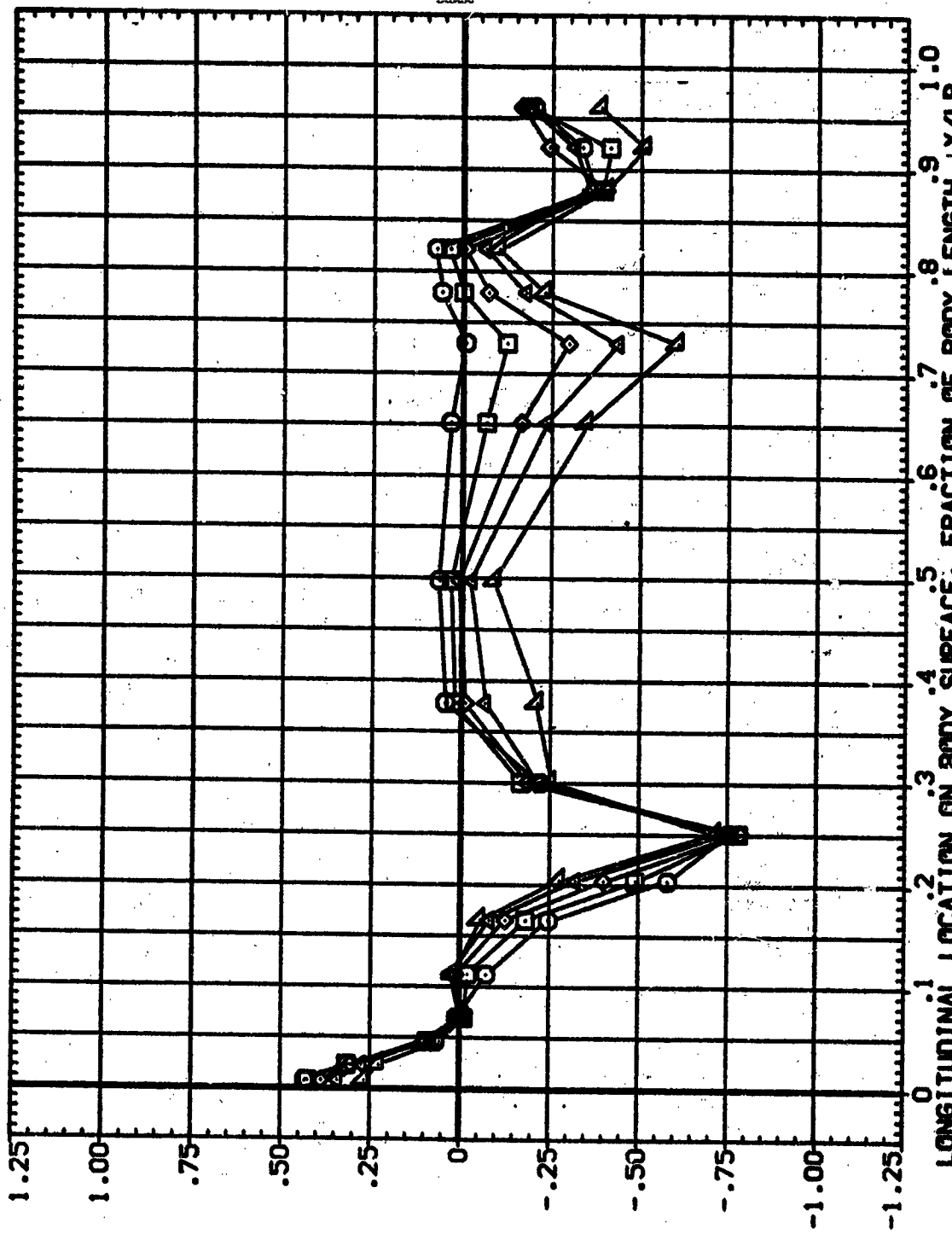
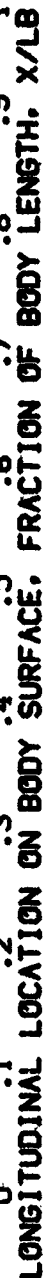


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

PHI	BETA
129.000	4.000

PARAMETRIC VALUES	
.000	SPOBCK
.000	L-ELVN
.000	HACH
35.000	
.000	
.000	
.000	



PAGE 808

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B16)

SYMBOL	ALPHA	PHI	BETA	R-ELVN	BOFLAP	R-ELVN	PARAMETRIC VALUES
◇	-4.000	150.000	4.000	.000	.000	.000	35.000
◇	.000			.000	.000	.000	.000
◇	4.000			.000	.000	.000	.000
◇	8.000			.000	.000	.000	.000
◇	12.000			.000	.000	.000	.000

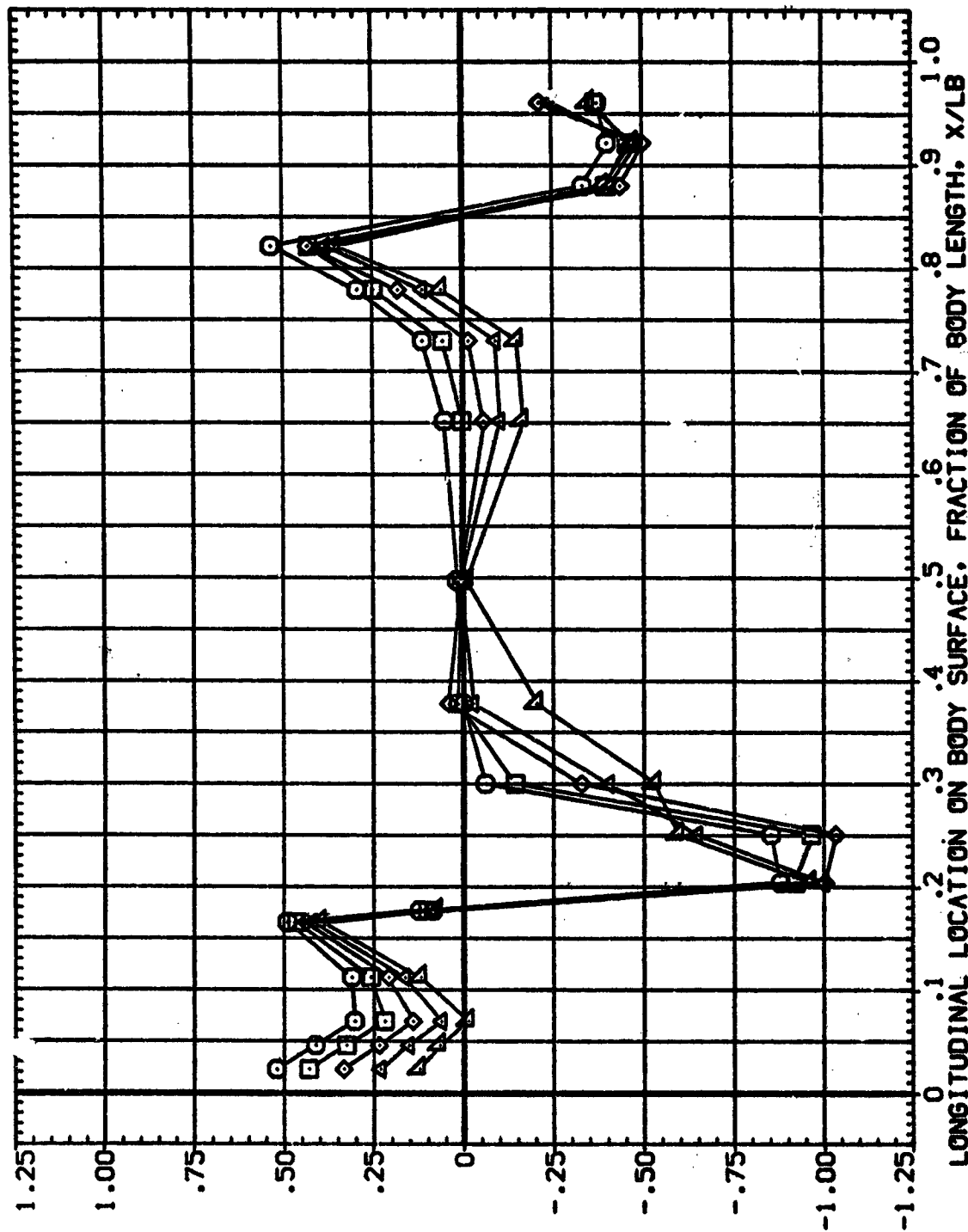


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
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 ◊
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 ○

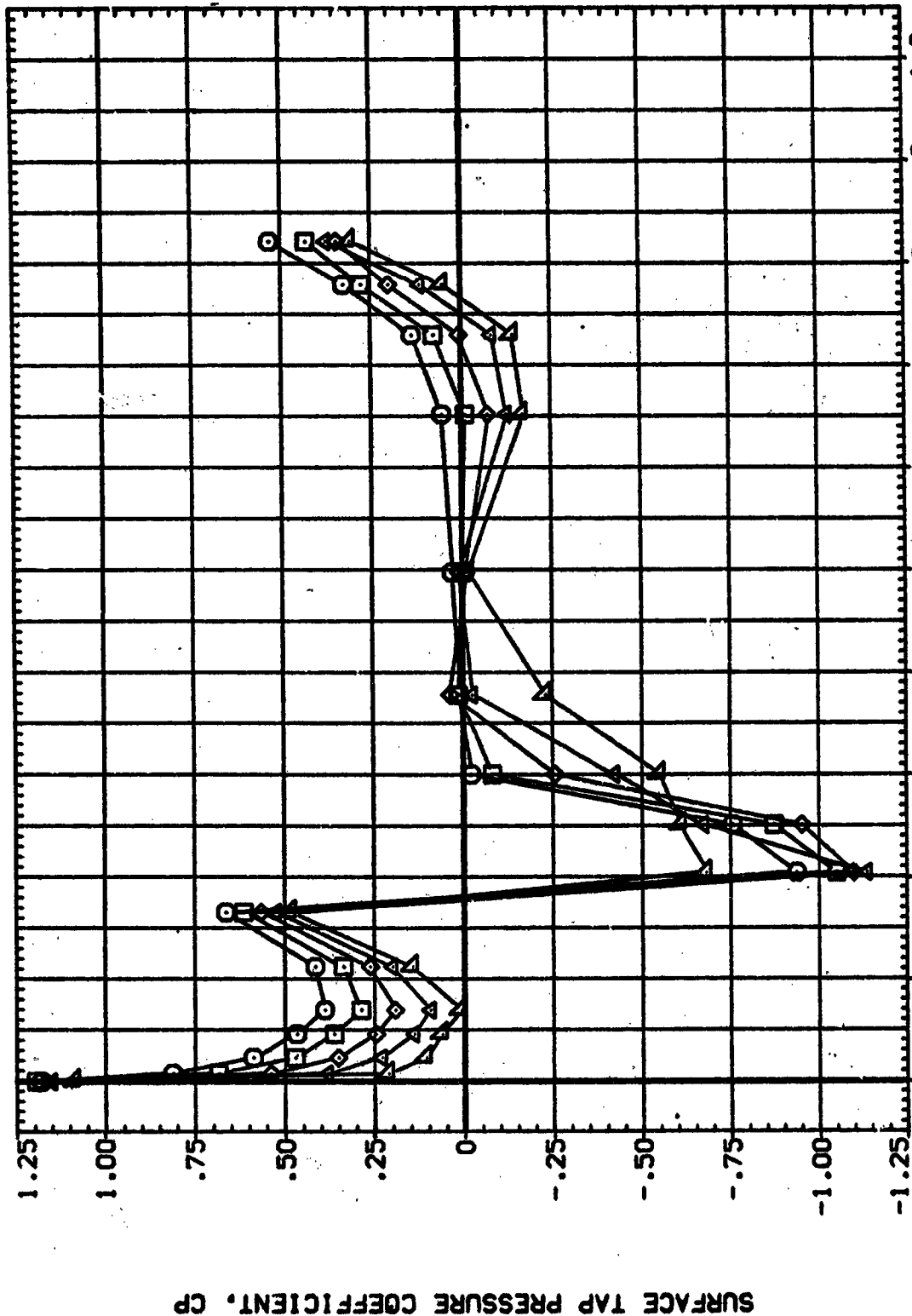
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000

BETA
 4.000

PARAMETRIC VALUES

RUDDER	SPDRK	35.000
BOFLAP	.000	.000
R-ELVN	.000	.500



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

(1E8B15)

SYNBO □ □ ◇ △ △

ALPHA	PHI	BETA
-4.000	.000	-4.000
.000		
4.000		
8.000		
12.000		

RUDDER	.000	SPORK	35.000
BOFLAP	.000	L-ELVN	.000
R-ELVN	.000	HACH	1.100

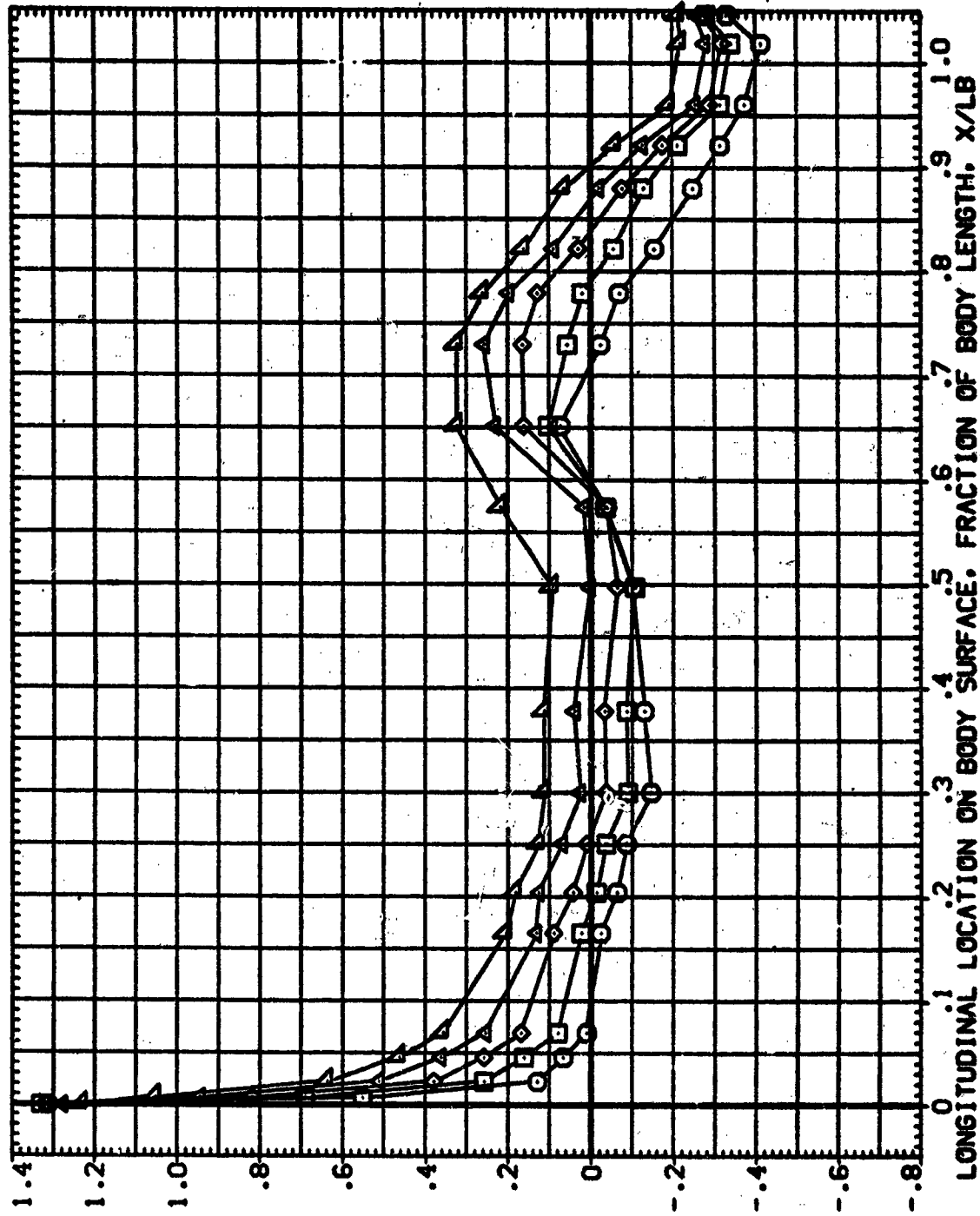


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 ◊
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ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 .000
 .000

SPDRK
 L-ELVN
 NACH

.000
 .000
 .000

35.000
 .000
 1.100

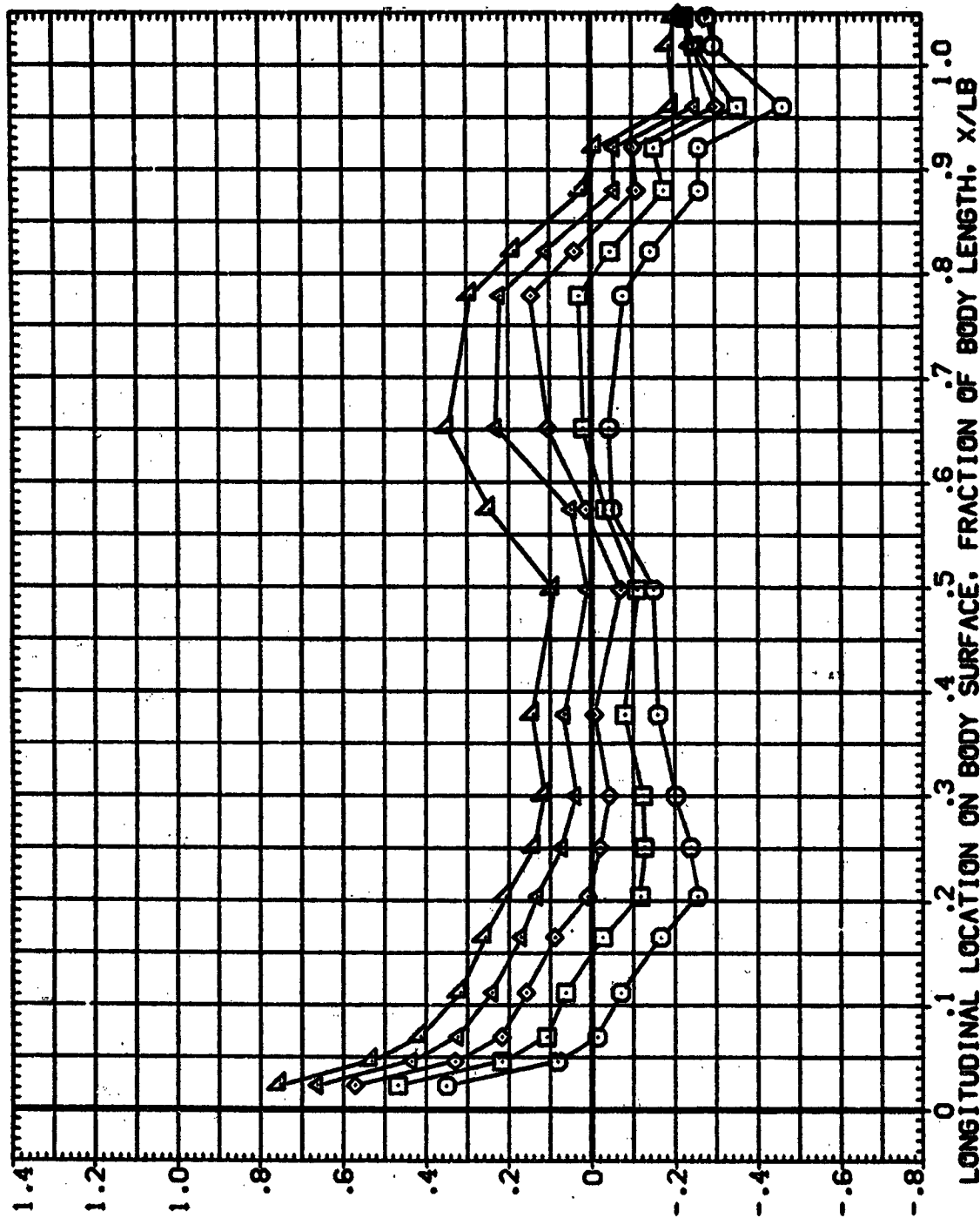


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B15)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	90.000	-4.000	80FLAP	.000 SP08RK 35.000
◇	.000			R-ELVN	.000 L-ELVN .000
□	4.000				.000 MACH 1.100
△	8.000				
▽	12.000				

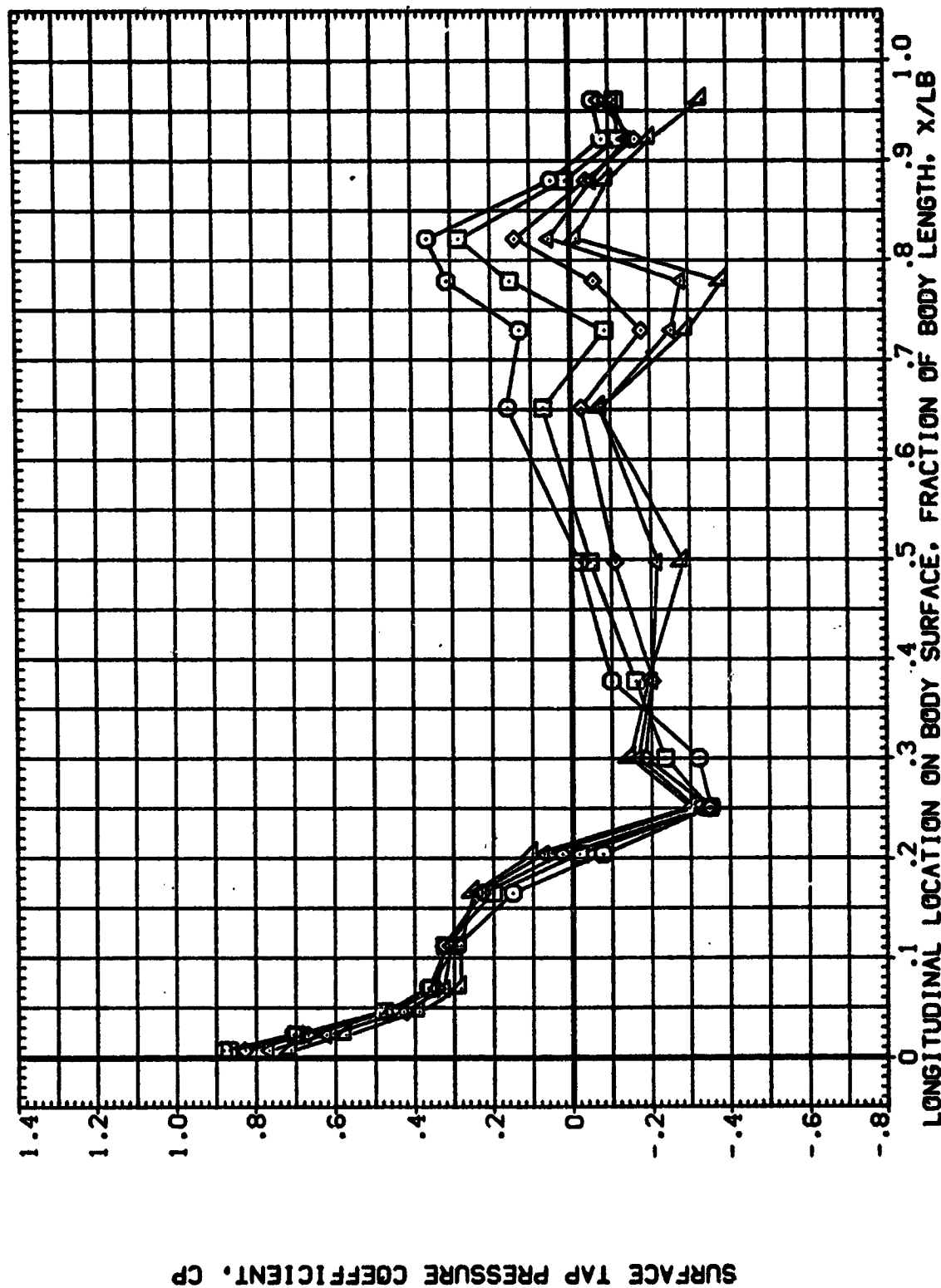


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 -4.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 .000
 .000

SPDRK
 L-ELVN
 MACH

35.000
 .000
 1.100

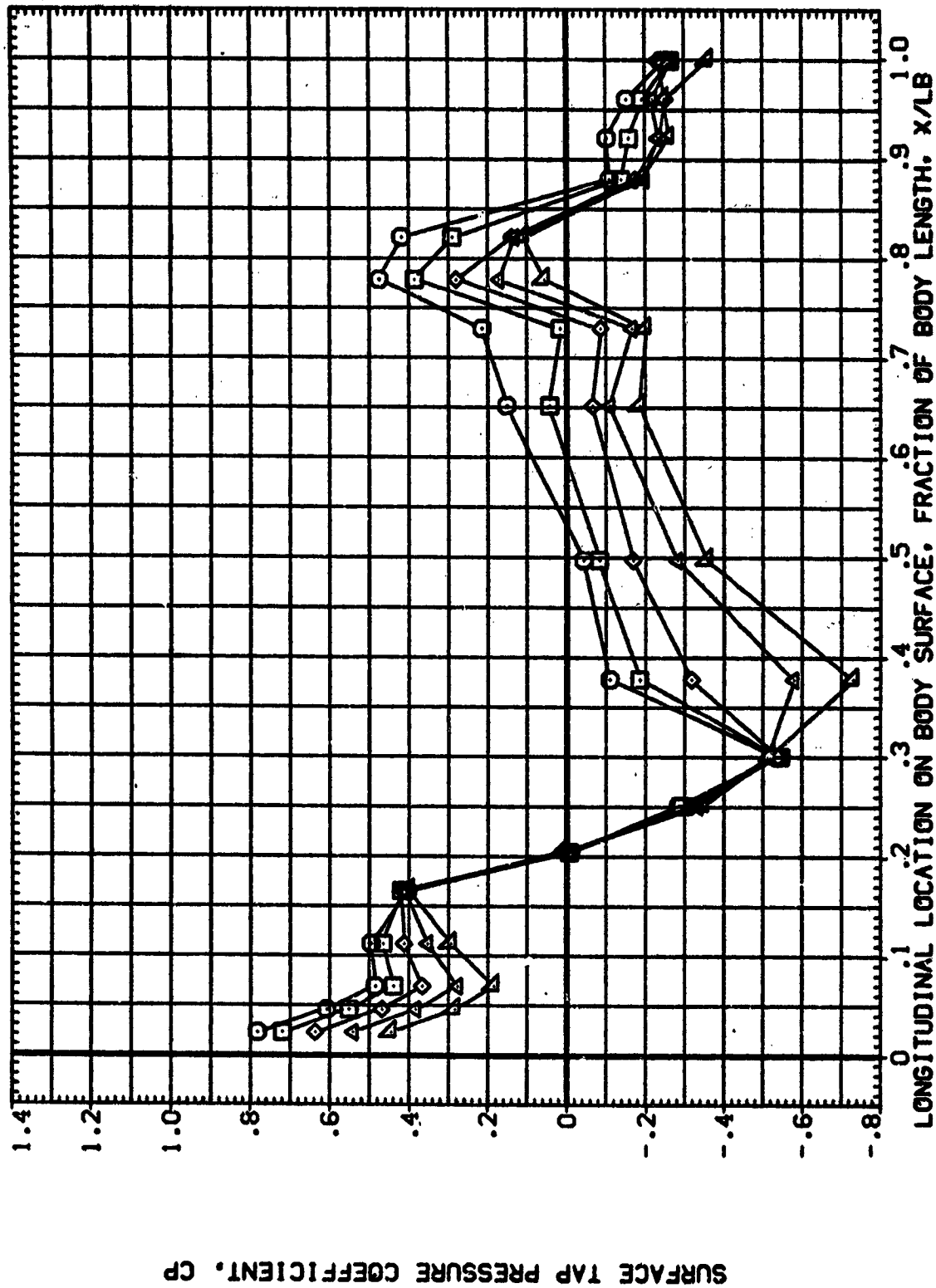


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -14G/B/C/R ORB FUSELAGE (IE8B15)

PARAMETRIC VALUES
 RUDDER .000 35.000
 BOFLAP .000 .000
 R-ELVN .000 1.100

ALPHA PHI BETA
 -1.000 150.000 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◊ □

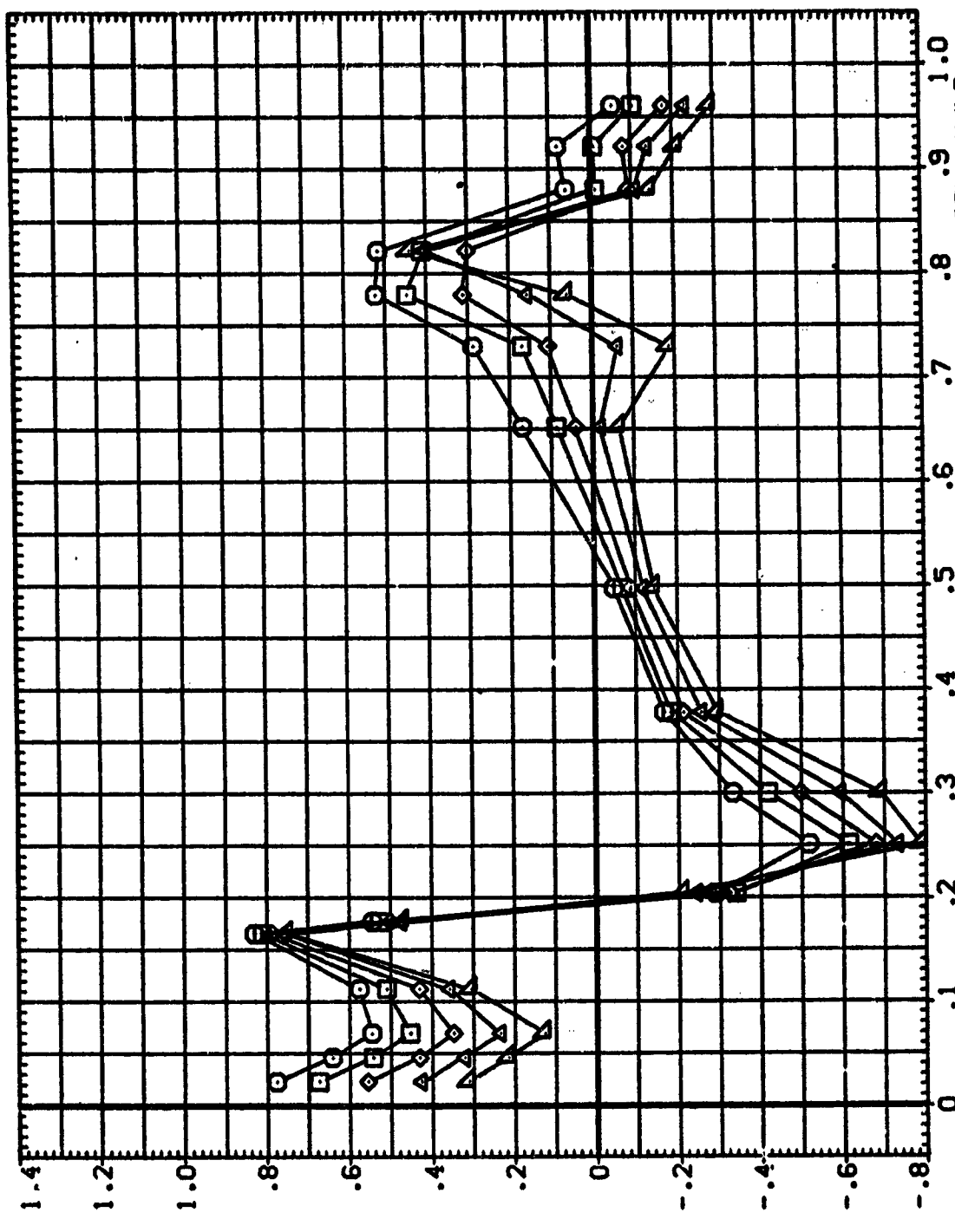


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽ ◊ ◻ ▴

ALPHA PHI BETA
 -4.000 180.000 -4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 NACH 1.100

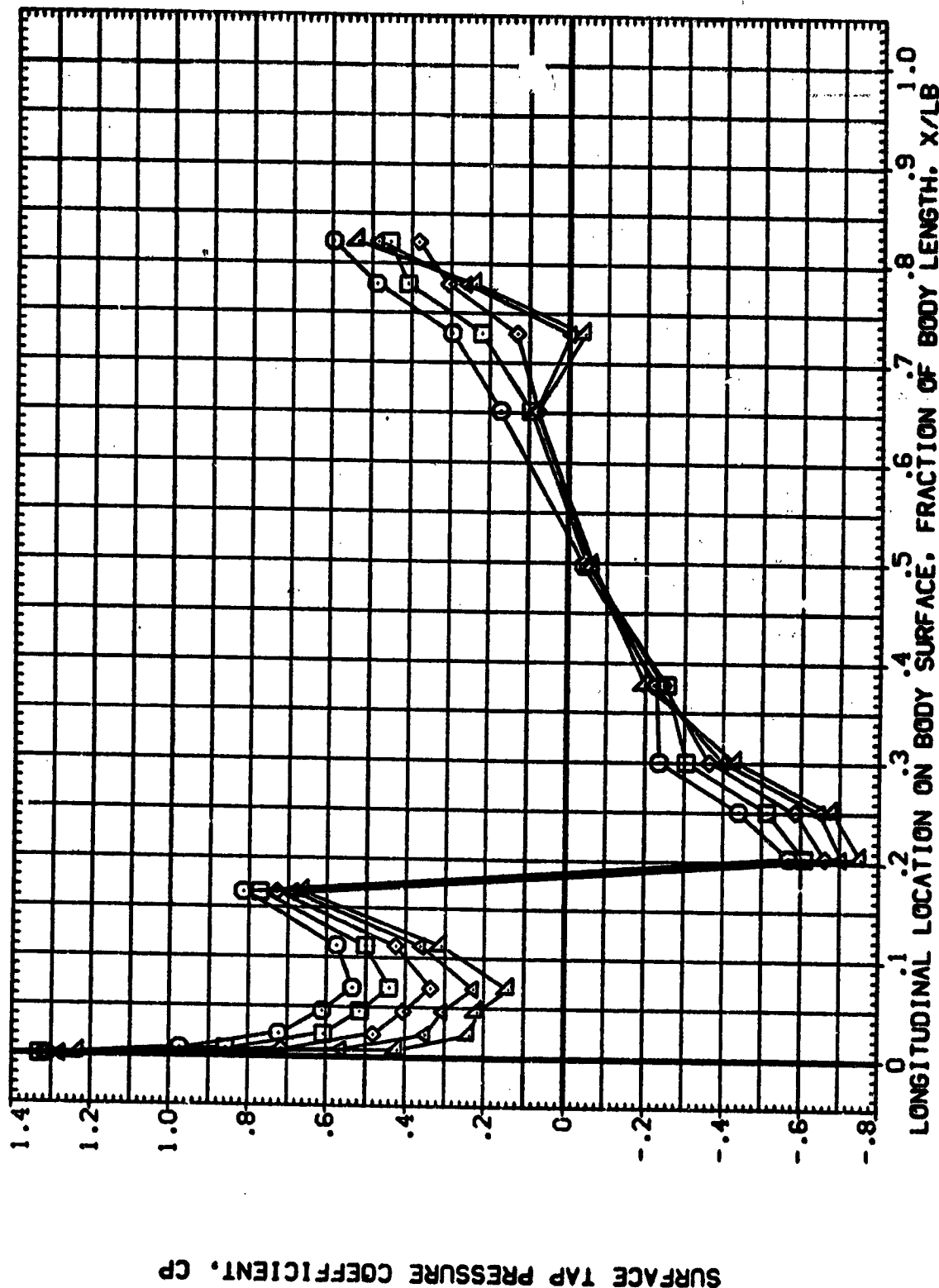


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B15)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRK	L-ELVN	MACH
○	-4.000	.000	.000					.000	.000	35.000
◇	.000	.000	.000					.000	.000	.000
△	4.000	.000	.000					.000	.000	1.100
▽	8.000	.000	.000					.000	.000	1.100
▽	12.000	.000	.000					.000	.000	1.100

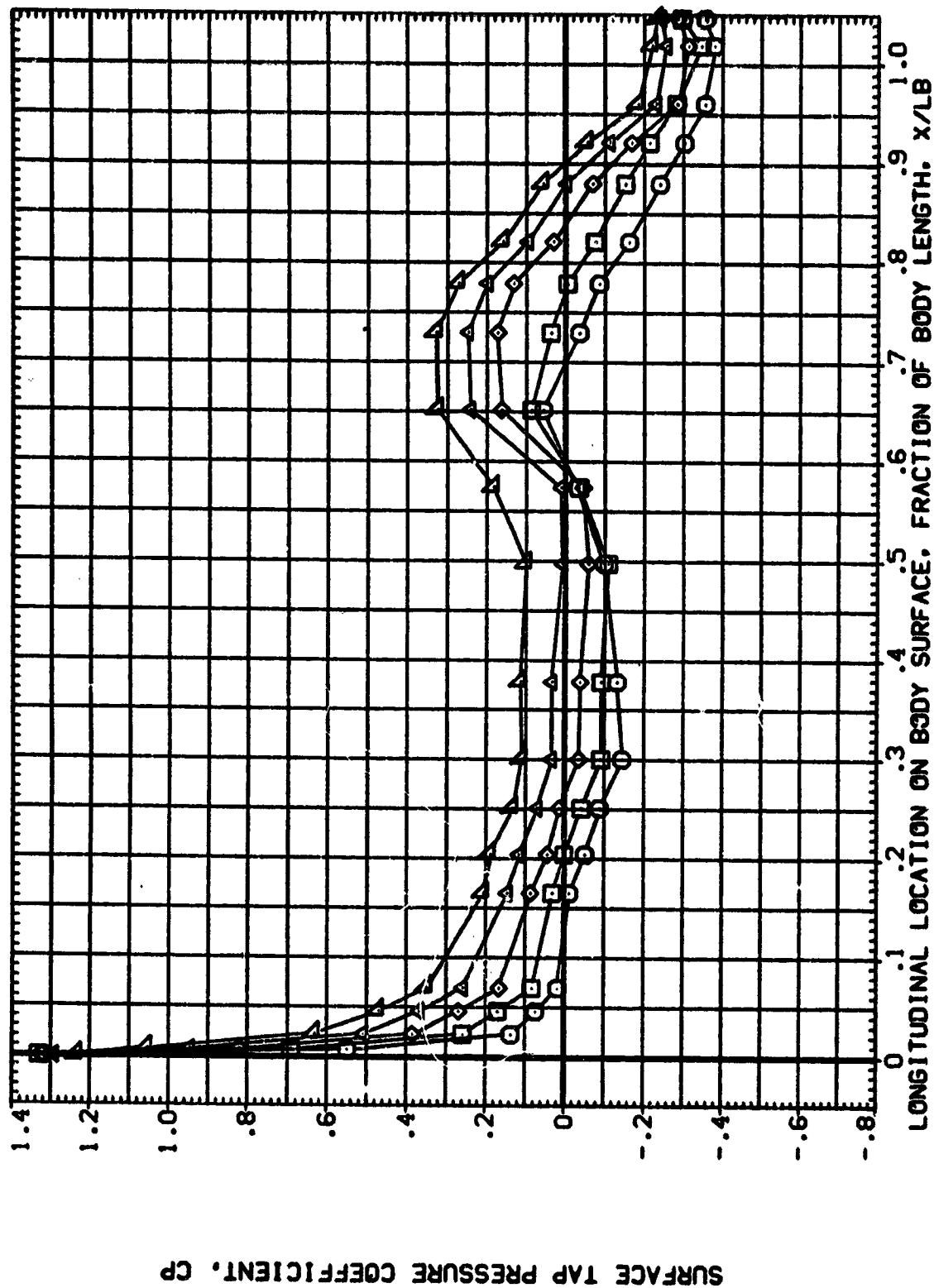


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
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 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRWK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

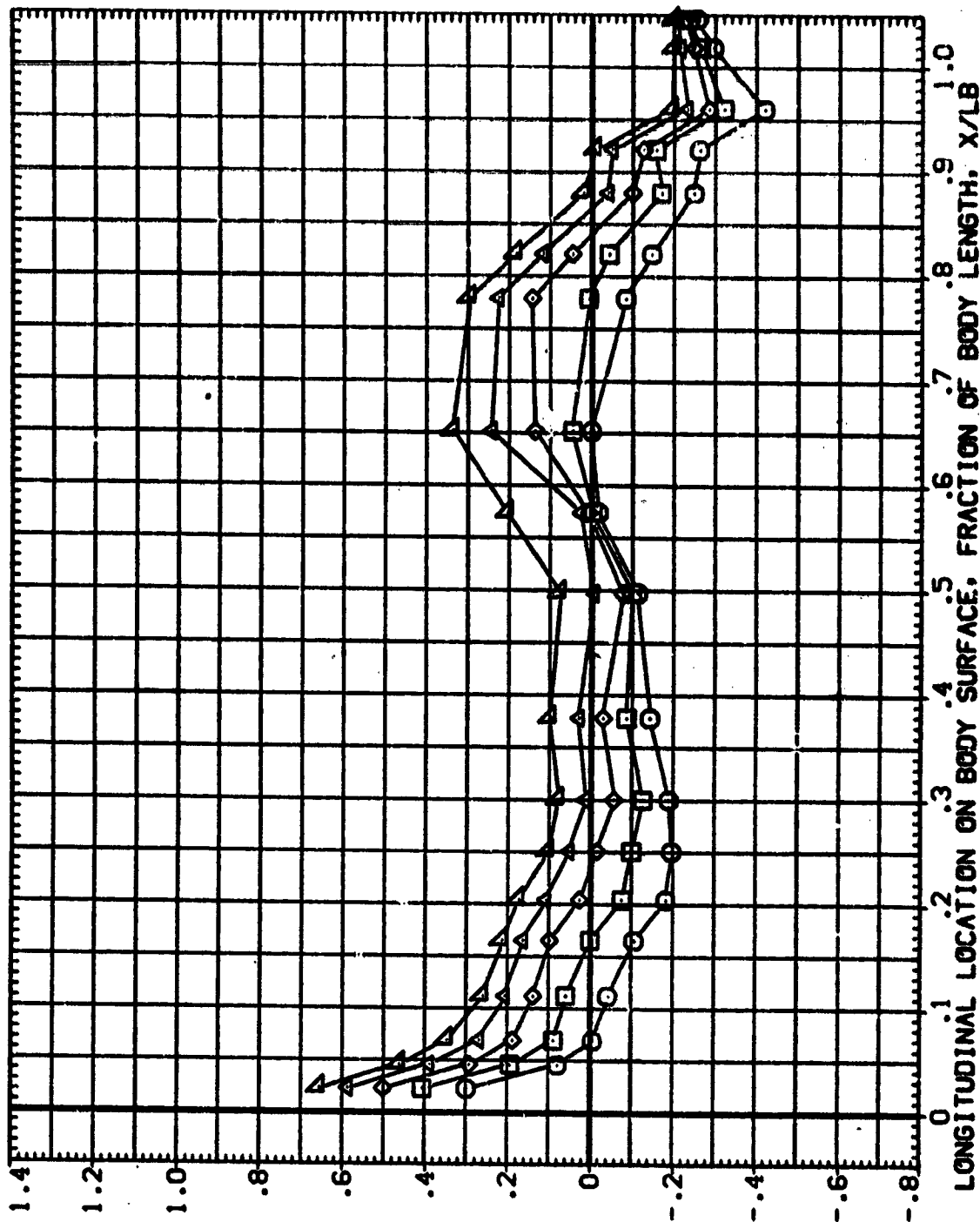


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B15)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA PHI BETA
 -4.000 50.000 .000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 50.000
 RUFLAP .000 L-ELVN .000
 R-ELVN .000 NACH .1.100

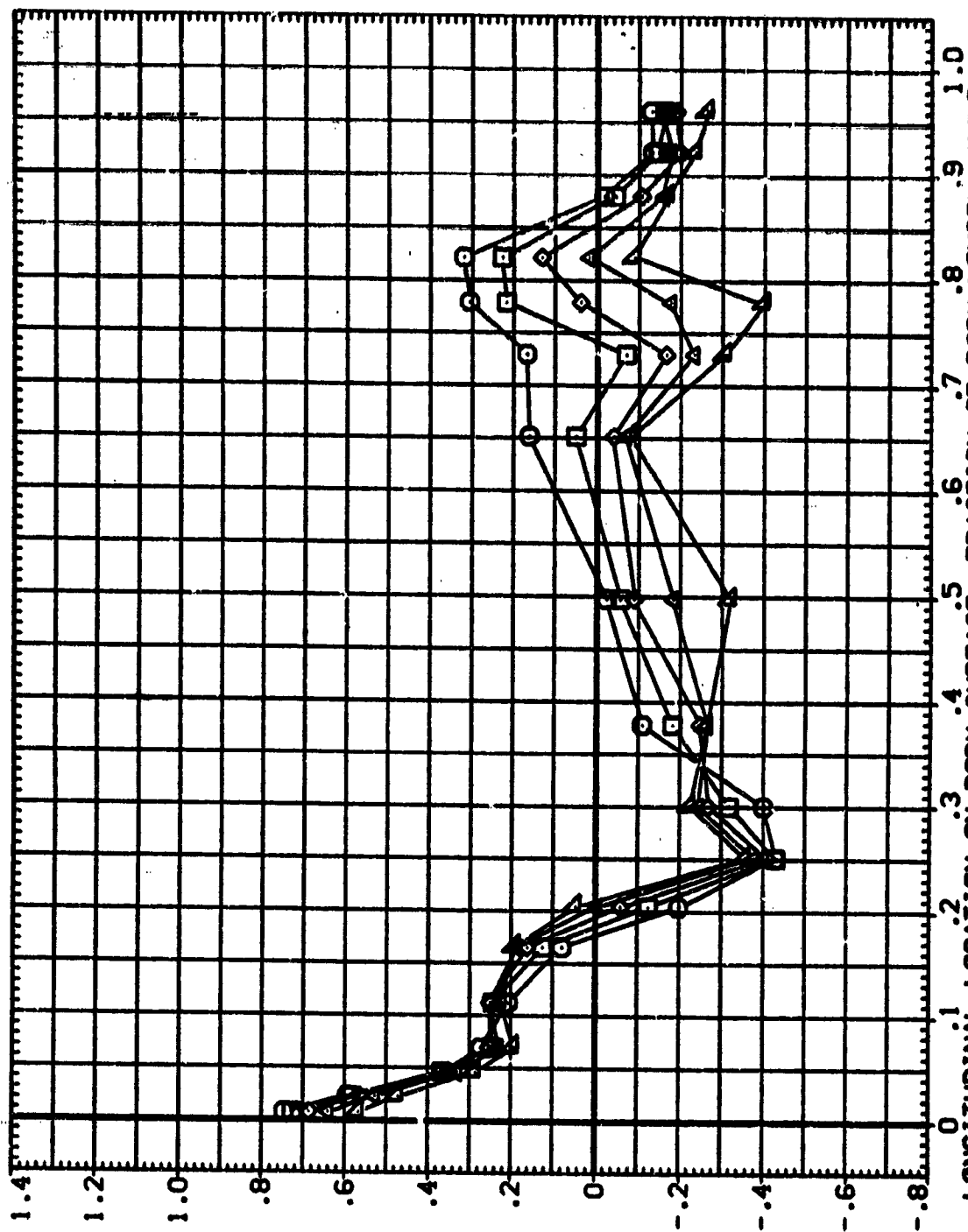


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

ALPHA	PHI	BETA
-4.000	120.000	.000
.000		
4.000		
8.000		
12.000		

PARAMETRIC VALUES	
.000	SPERM
.000	L-EVM
.000	NACH
35.000	
.000	
1.100	

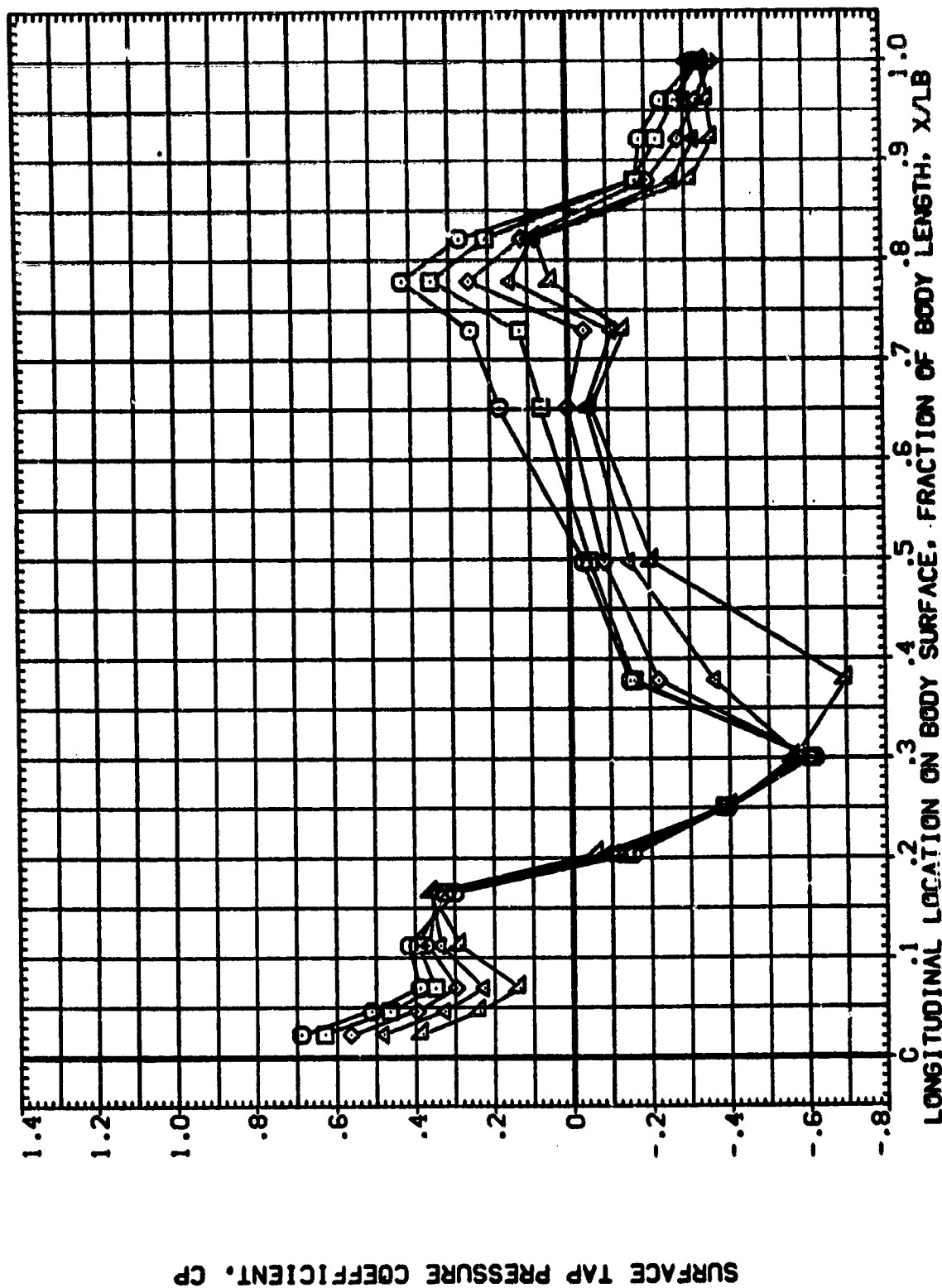


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B15)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA PHI BETA
 -4.000 150.000 .000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES

RUDER .000 SPDRRT 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 HACH 1.100

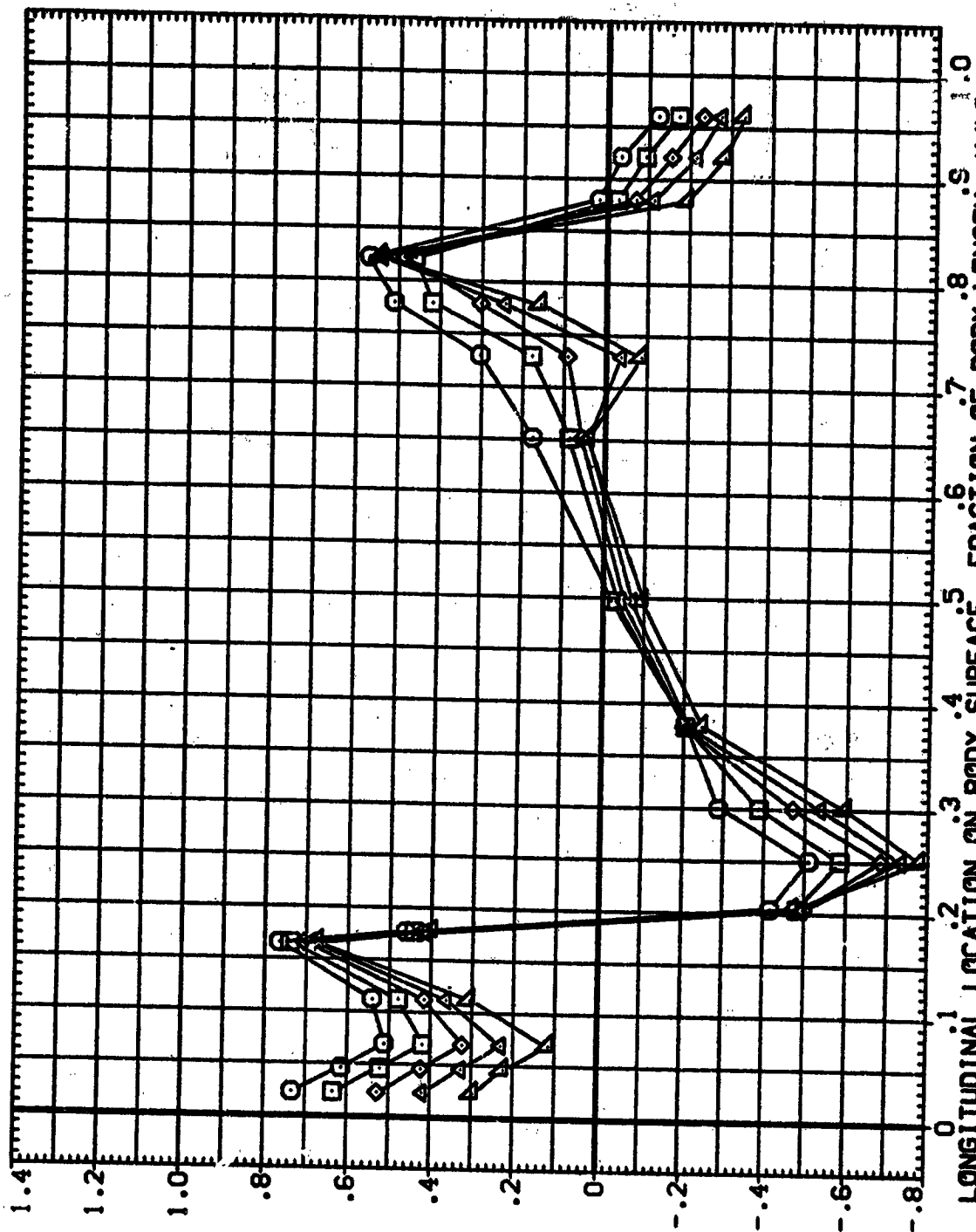


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 4.000
 8.000
 12.000

PHI
 180.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

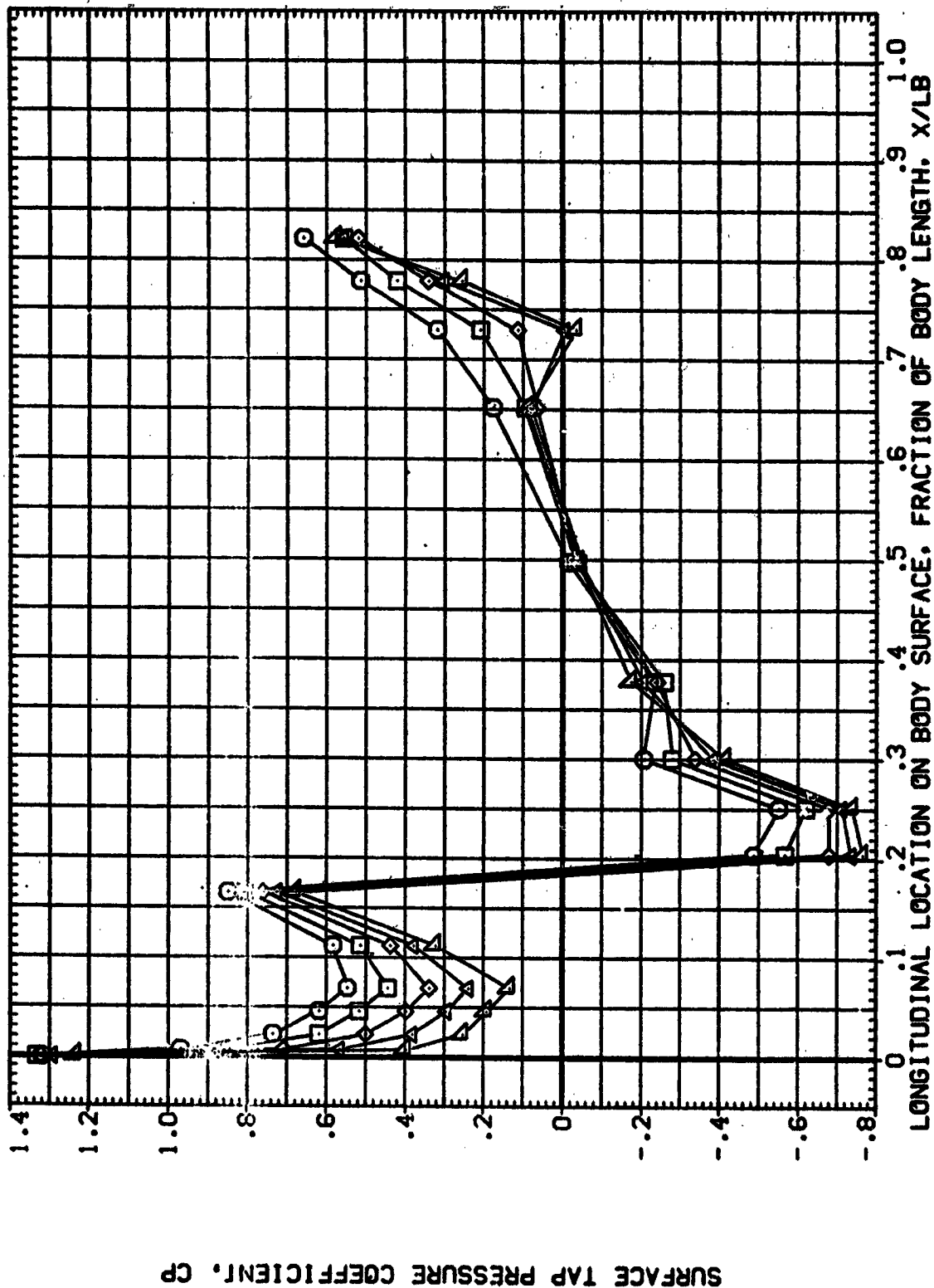


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B15)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI .000

BETA 4.000

PARAMETRIC VALUES

RUDDER .000

BOFLAP .000

R-ELVN .000

SPDRBK 35.000

L-ELVN .000

MACH 1.100

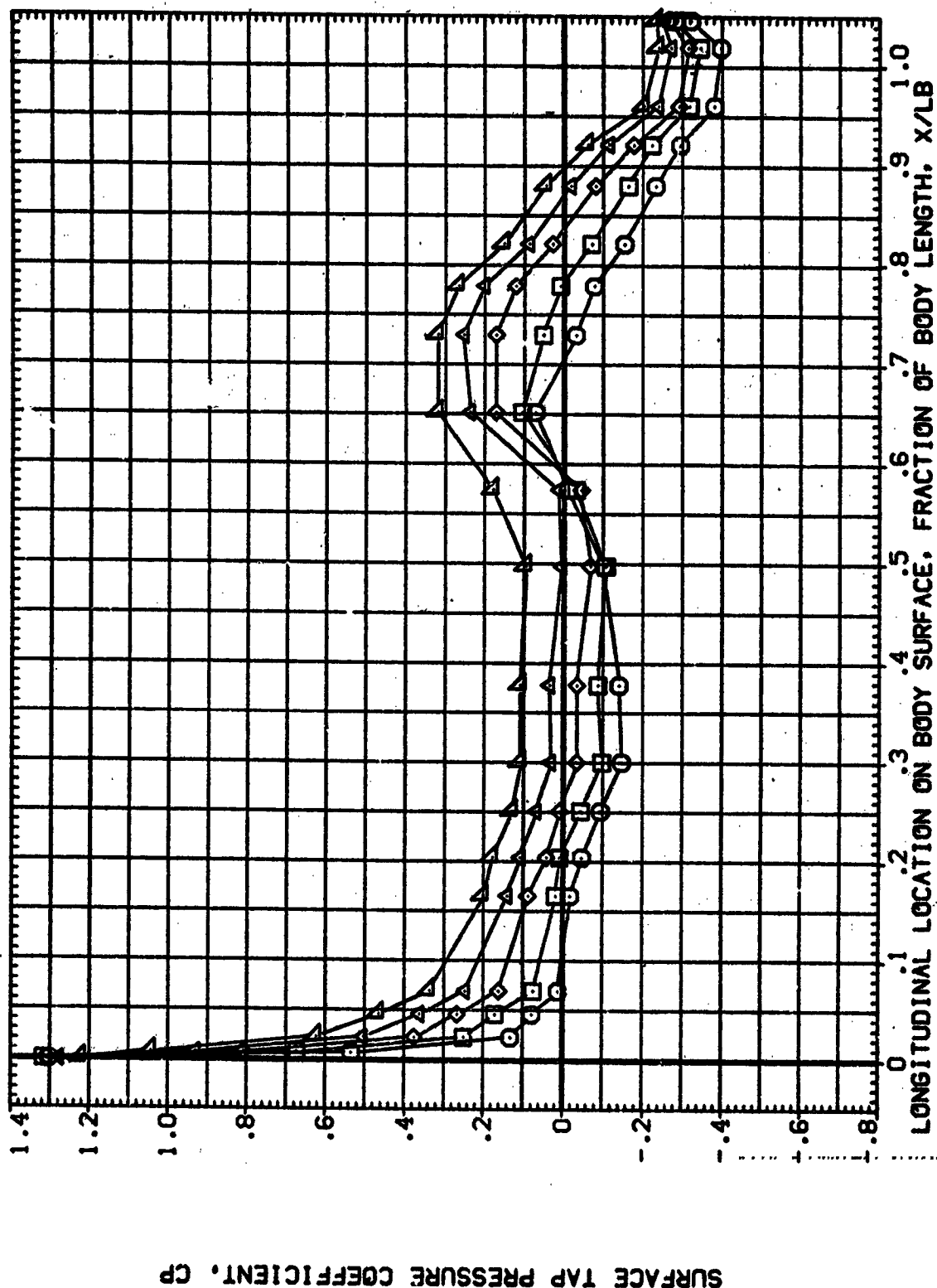


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 40.000
 BETA 4.000

PARAMETRIC VALUES

RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

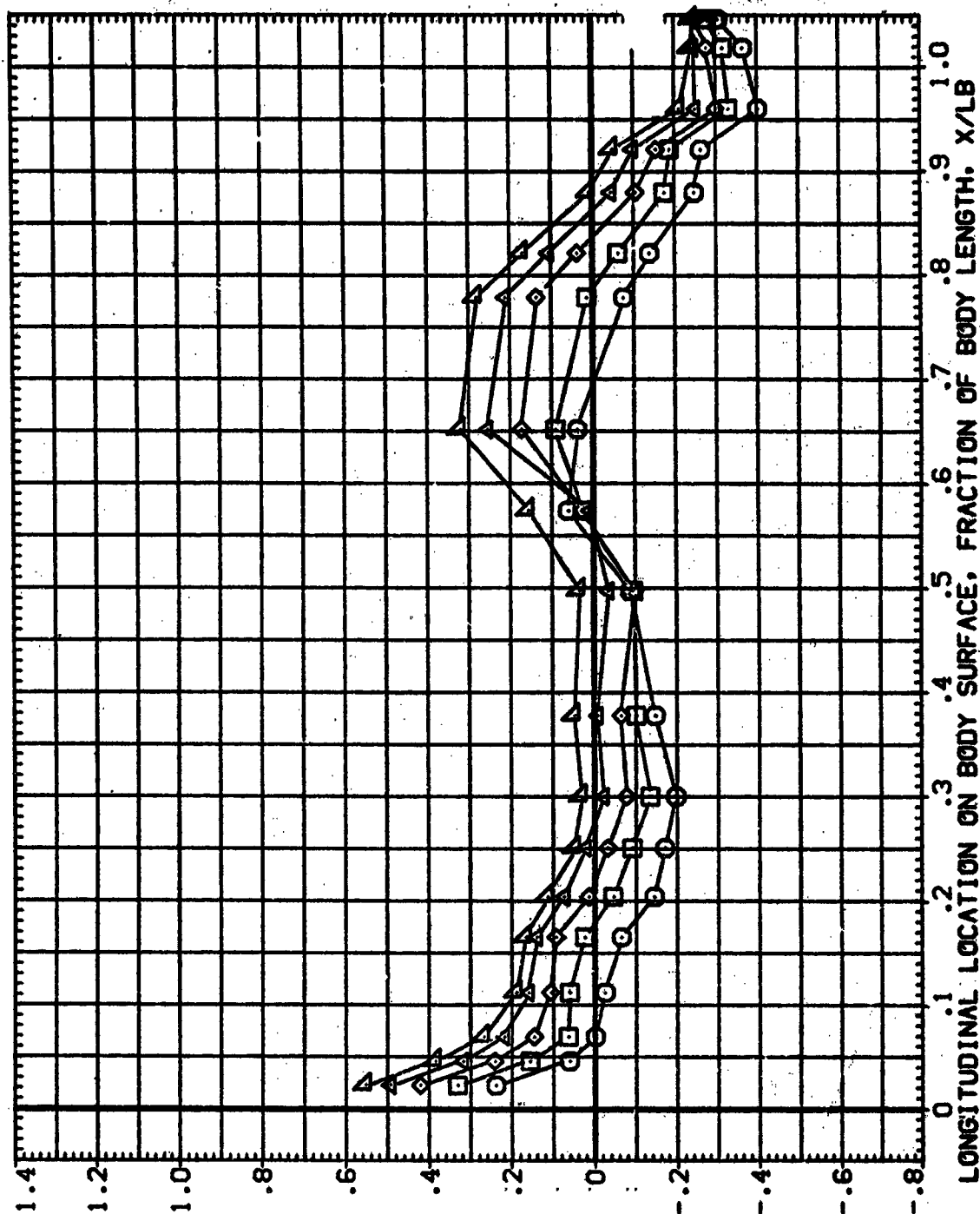


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B15)

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 80FLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

ALPHA PHI BETA
 -4.000 90.000 4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ○

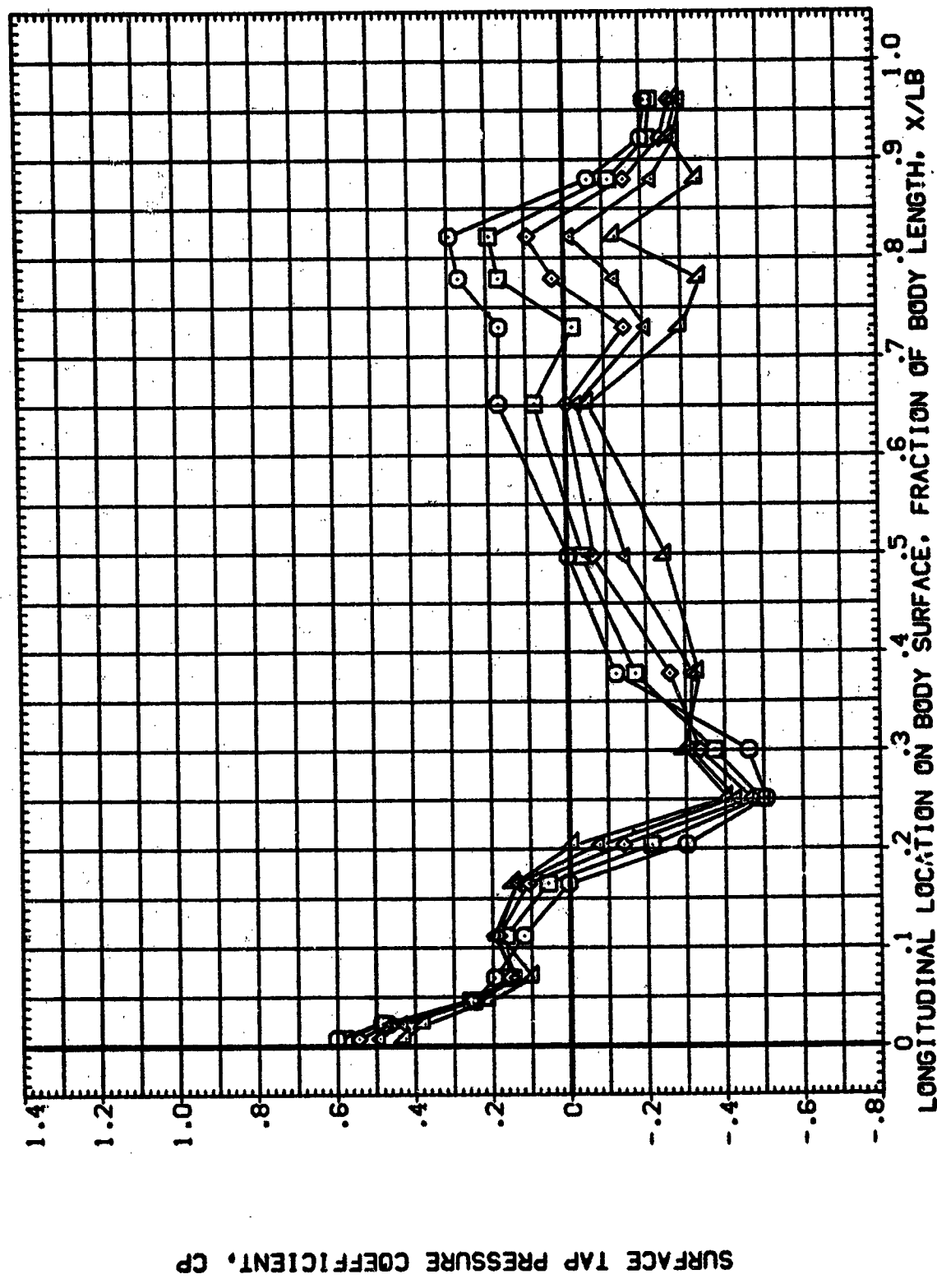


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 4.000

PARAMETRIC VALUES

PARAMETRIC VALUES	RUDDER	80FLAP	R-ELVN	SPDRBK	L-ELVN	MACH
	.000	.000	.000	.000	.000	1.100
	.000	.000	.000	.000	.000	1.100

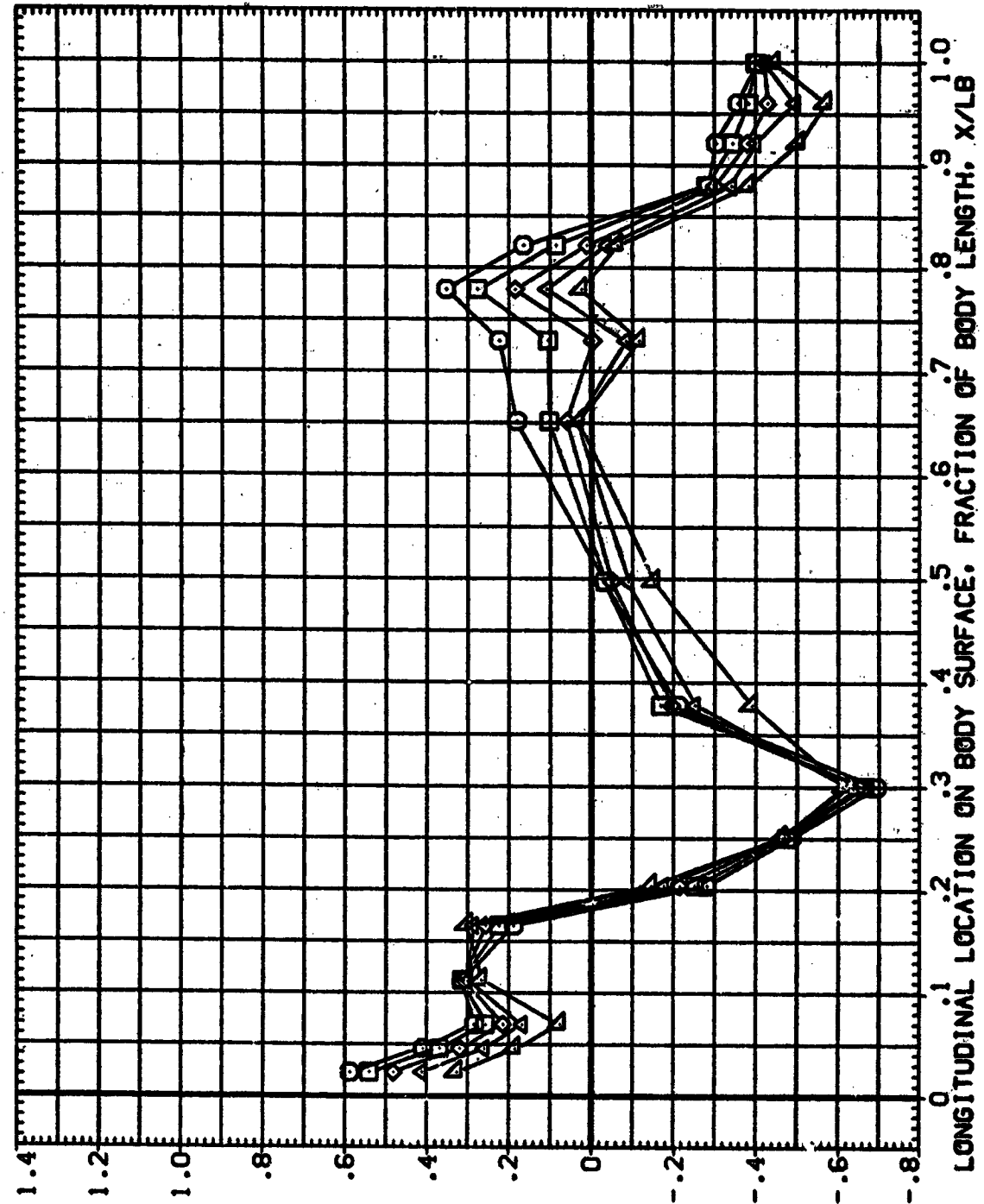


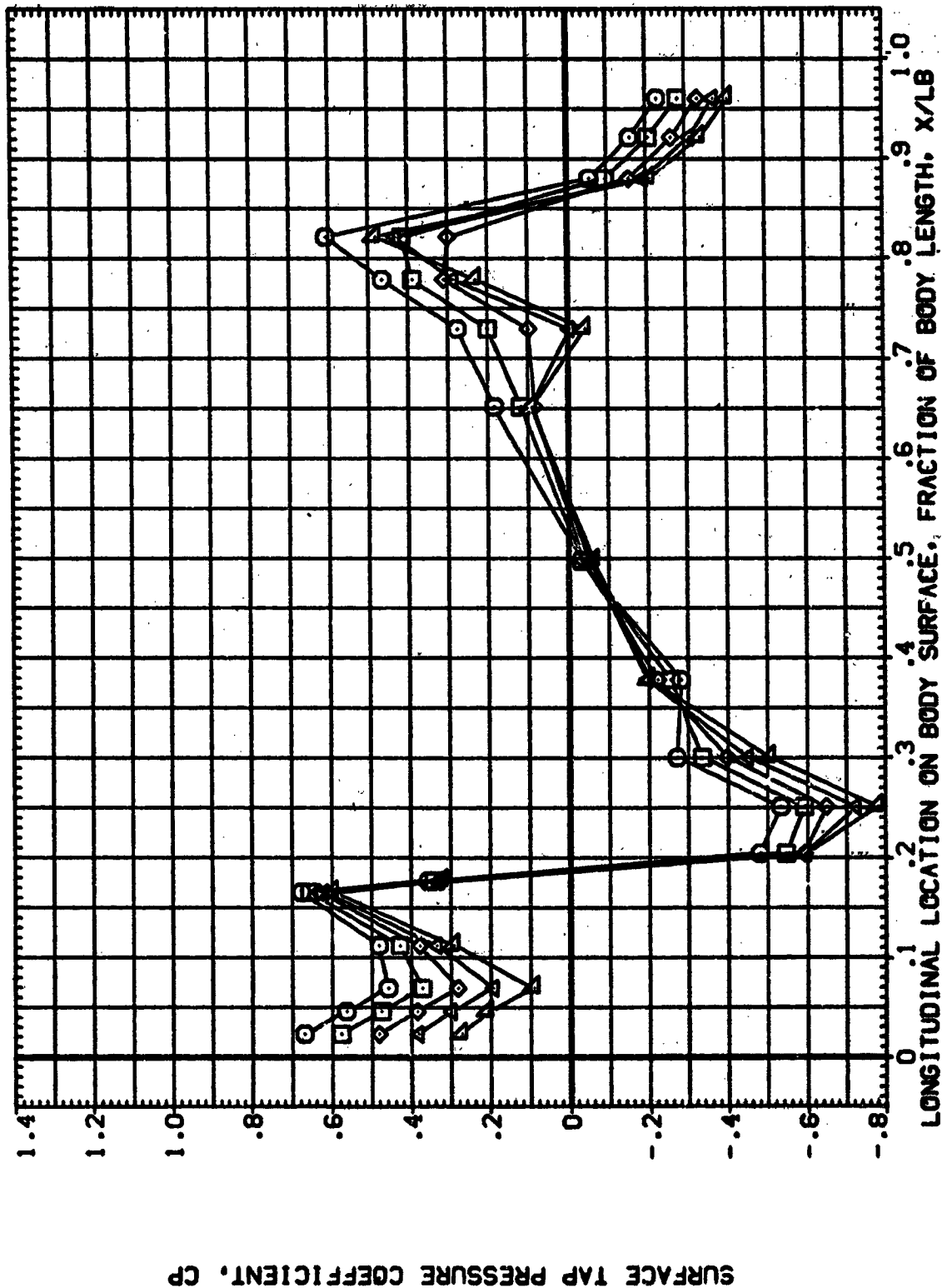
FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B15)

PARAMETRIC VALUES
 RUDDER .000 35.000
 BOFLAP .000 .000
 R-ELVN .000 1.100

ALPHA PHI BETA
 -4.000 150.000 4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ □ ◇ △



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ALPHA PHI BETA
 -4.000 180.000 4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

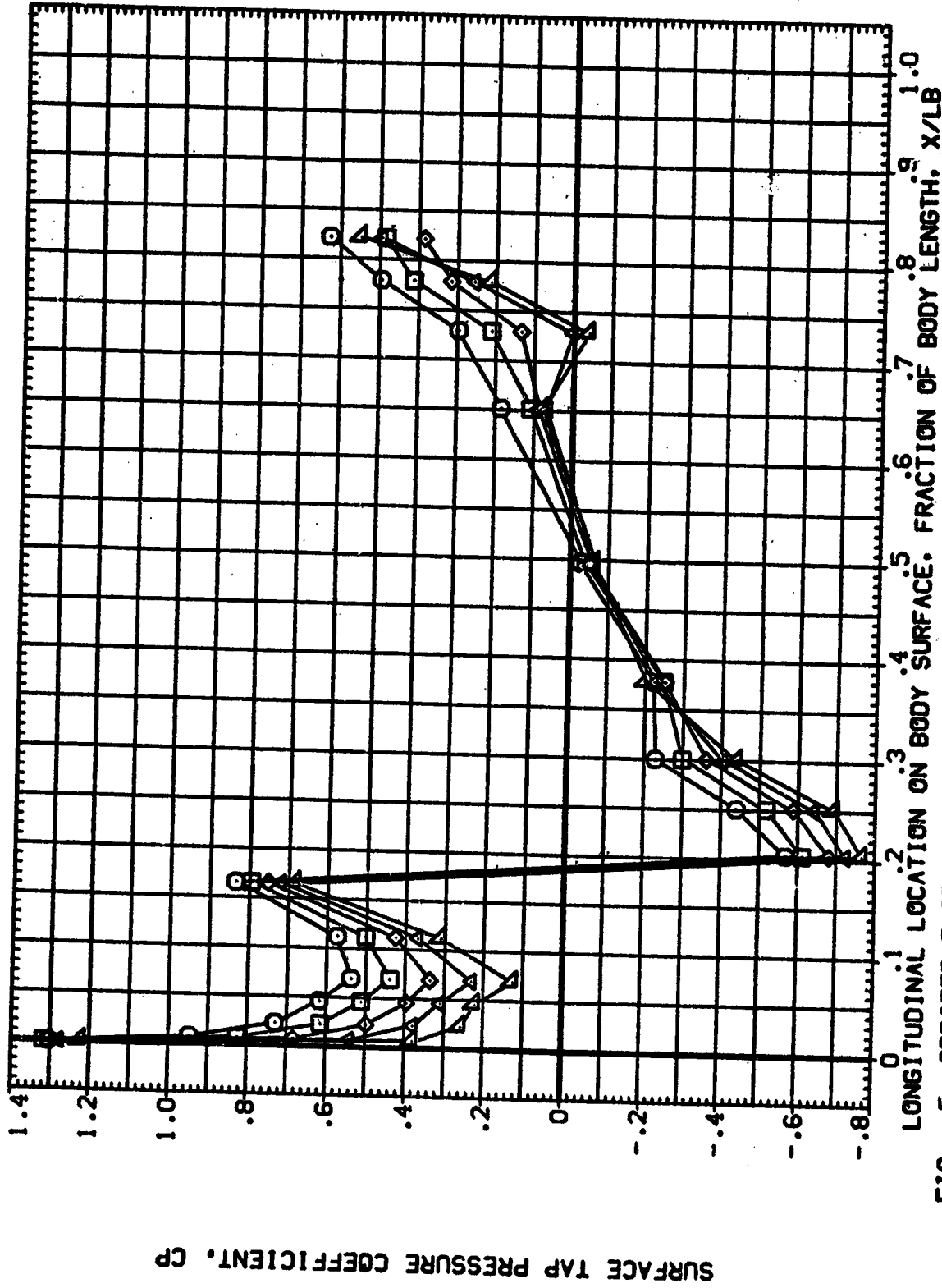


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B14)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRX	L-ELVN	NACH
▽	-4.000	.000	-4.000					.000	.000	.000
□	.000							.000	.000	.000
◇	4.000							.000	.000	.000
△	8.000							.000	.000	.000
▽	12.000							.000	.000	1.250

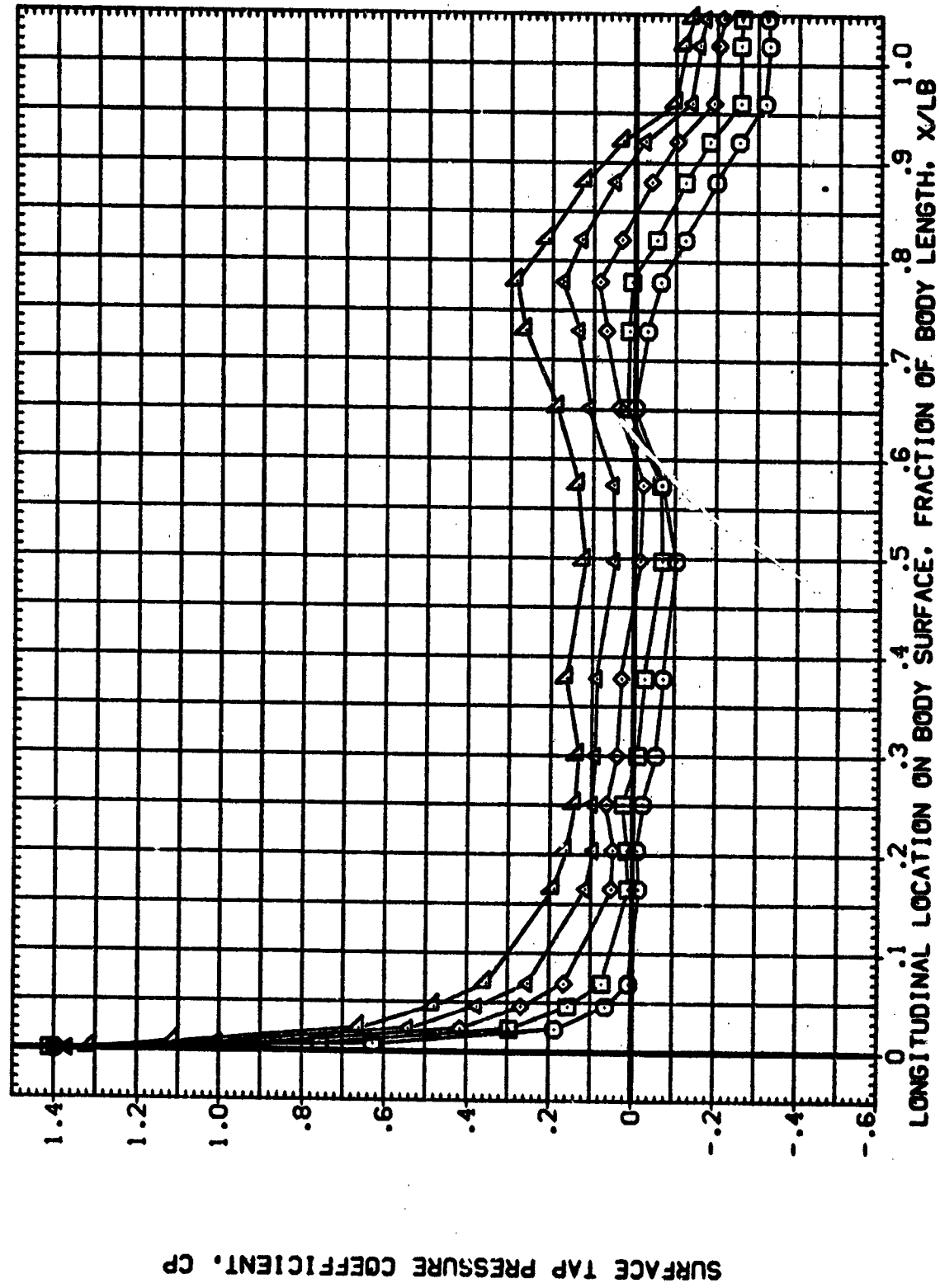


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 □, △, ▽

ALPHA
 -4.000
 .000
 4.000
 6.000
 12.000

PHI
 40.000

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRM 35.000
 SOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

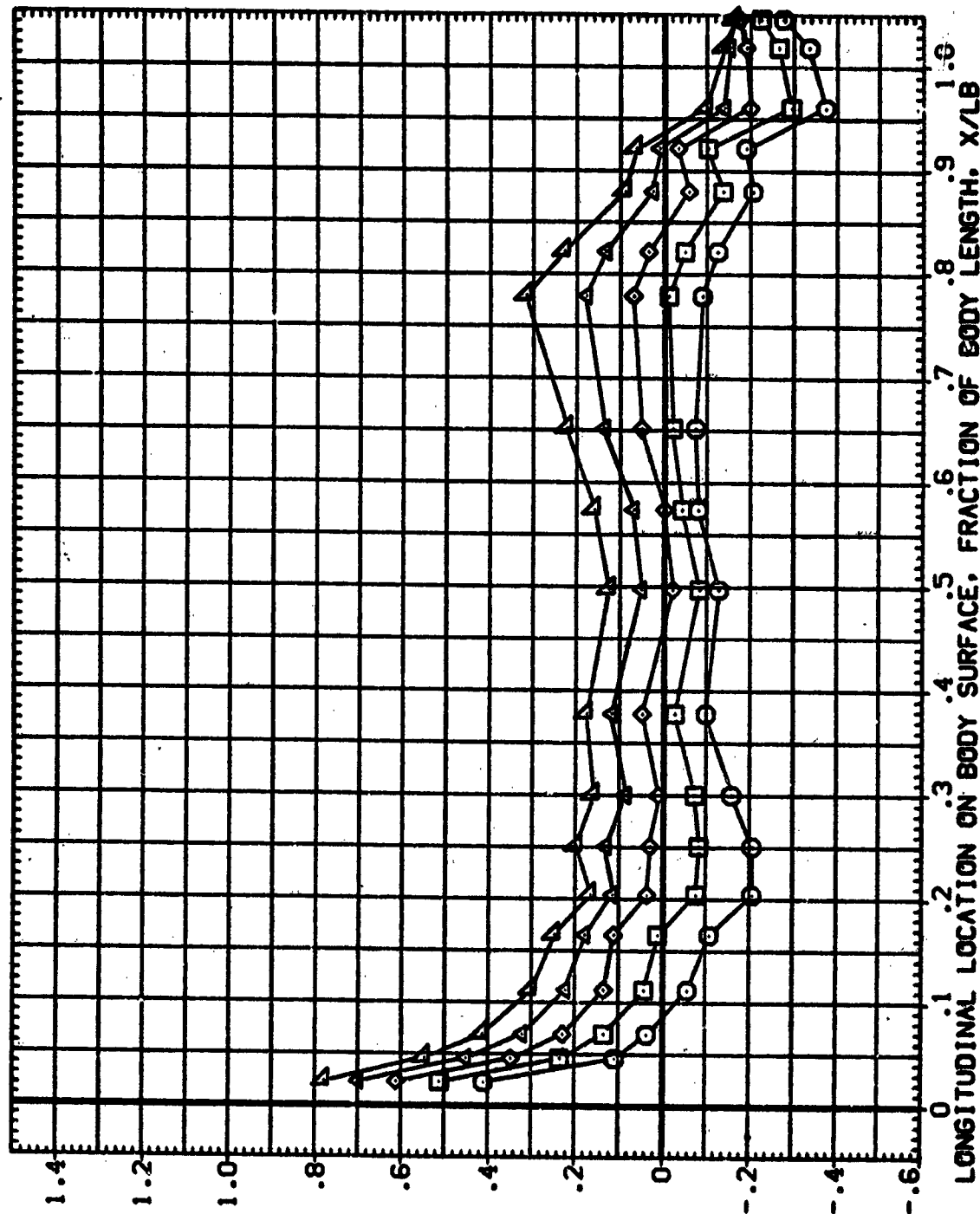


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B14)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	90.000	-4.000	BOFLAP	.000 SPDRBK 35.000
◇	.000			R-ELVN	.000 L-ELVN .000
□	4.000				.000 MACH 1.250
△	6.000				
▽	12.000				

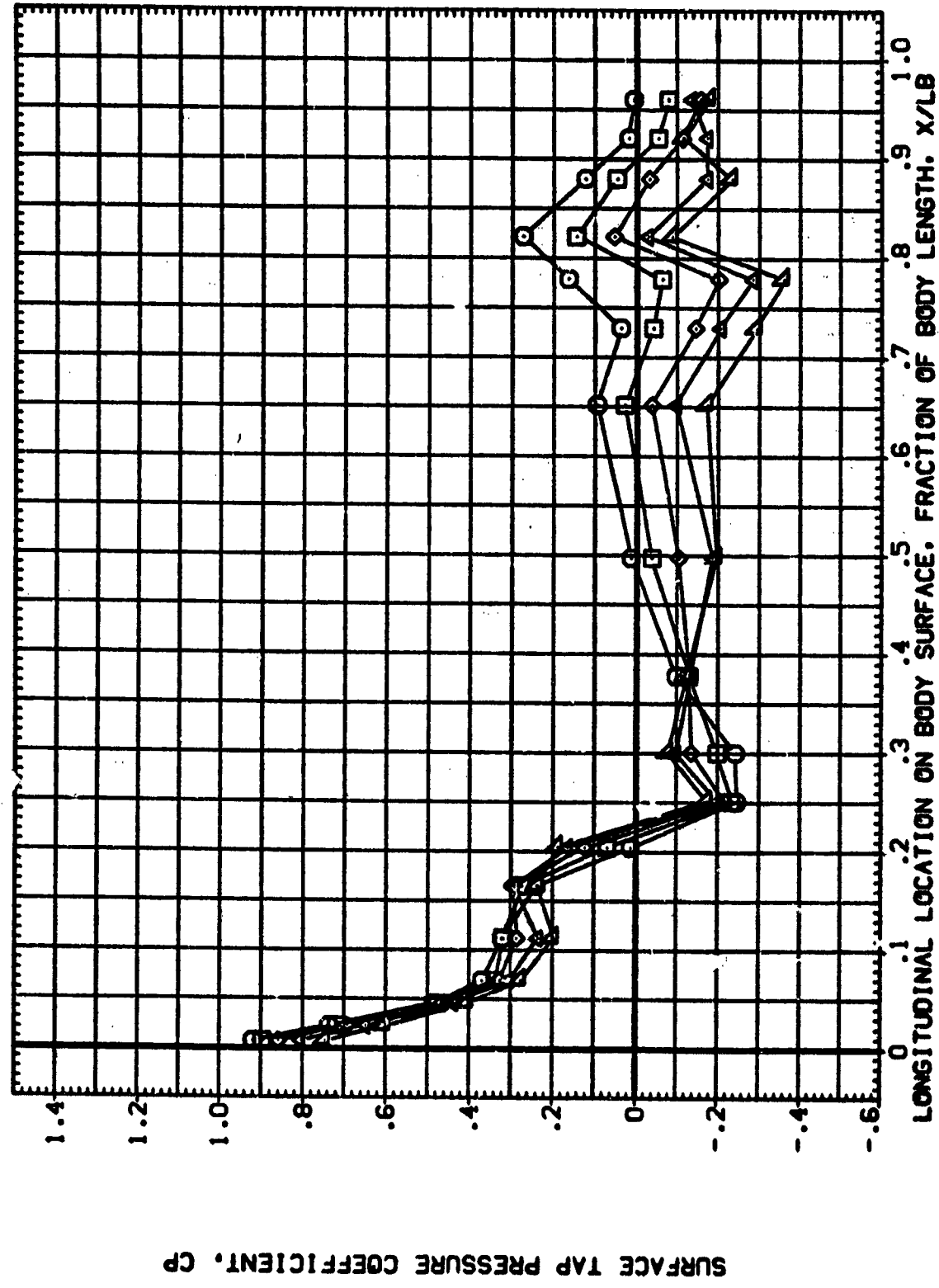


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
▽
◇
□
△

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
120.000

BETA
-4.000

PARAMETRIC VALUES

RUDDER
80FLAP
R-ELVN

SP080RX
.000
.000
.000

L-ELVN
.000

MACH
1.250

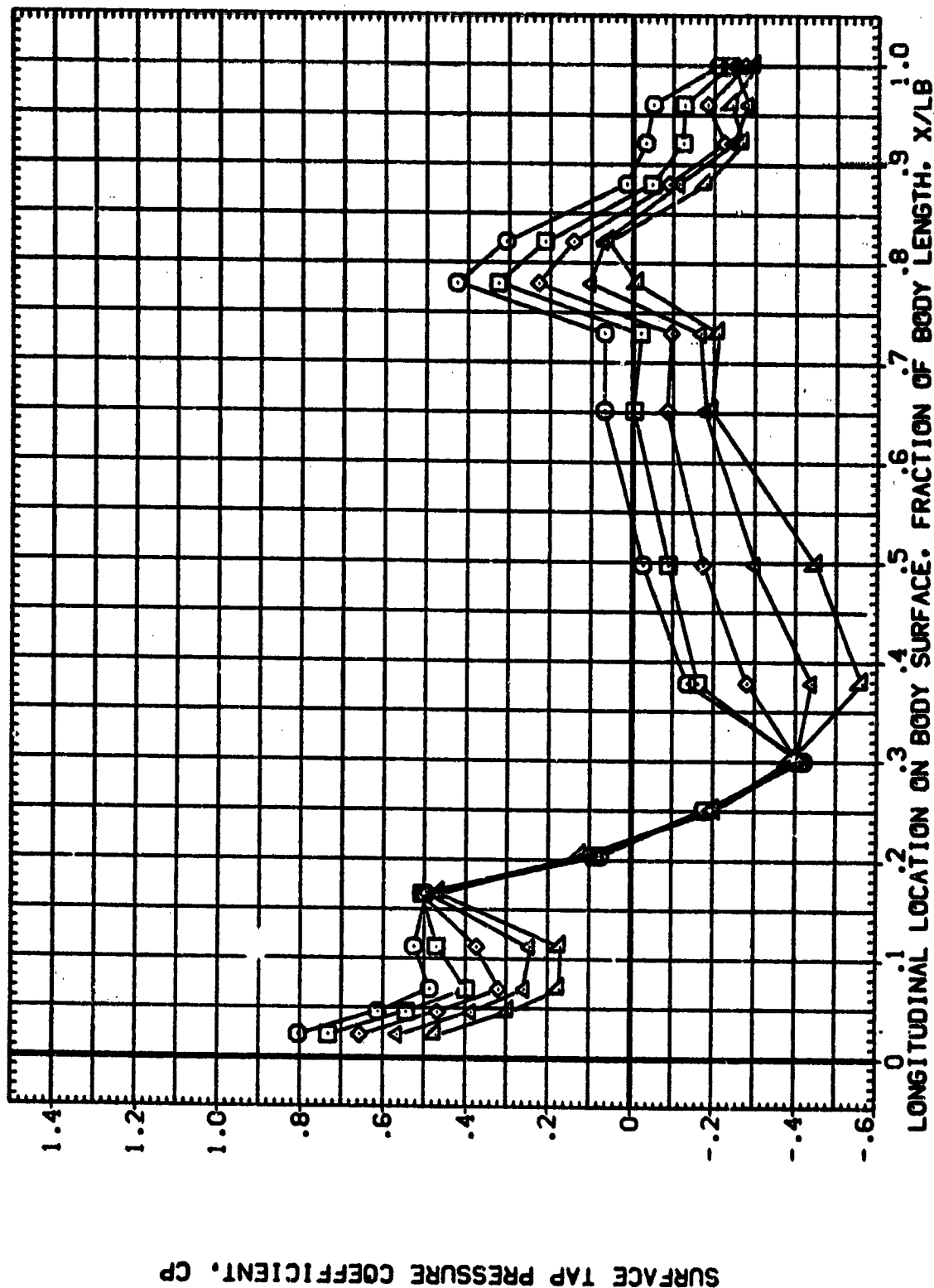


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B14)

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 150.000

BETA
 -4.000

PARAMETRIC VALUES

RUDDER
 .000
 .000
 .000

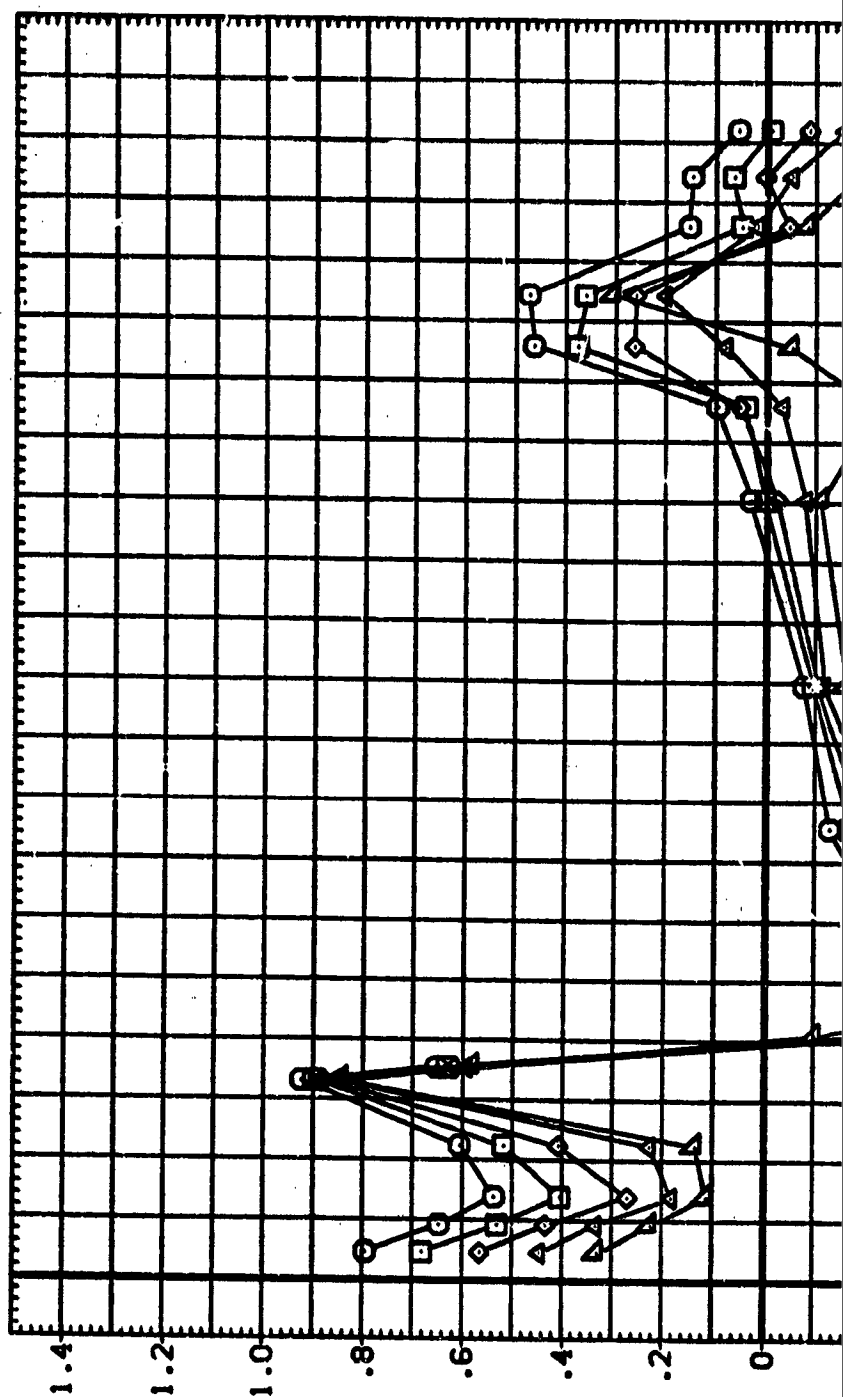
SPDRBY
 .000
 .000
 .000

L-ELVN
 .000
 .000
 .000

R-ELVN
 .000
 .000
 .000

MACH
 .000
 .000
 .000

35.000
 .000
 1.250



Surface Tap Pressure Coefficient, Cp

SYMBOL
 ○ □ ◇ △

ALPHA 180.000
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 180.000
 -4.000

BETA -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRNK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

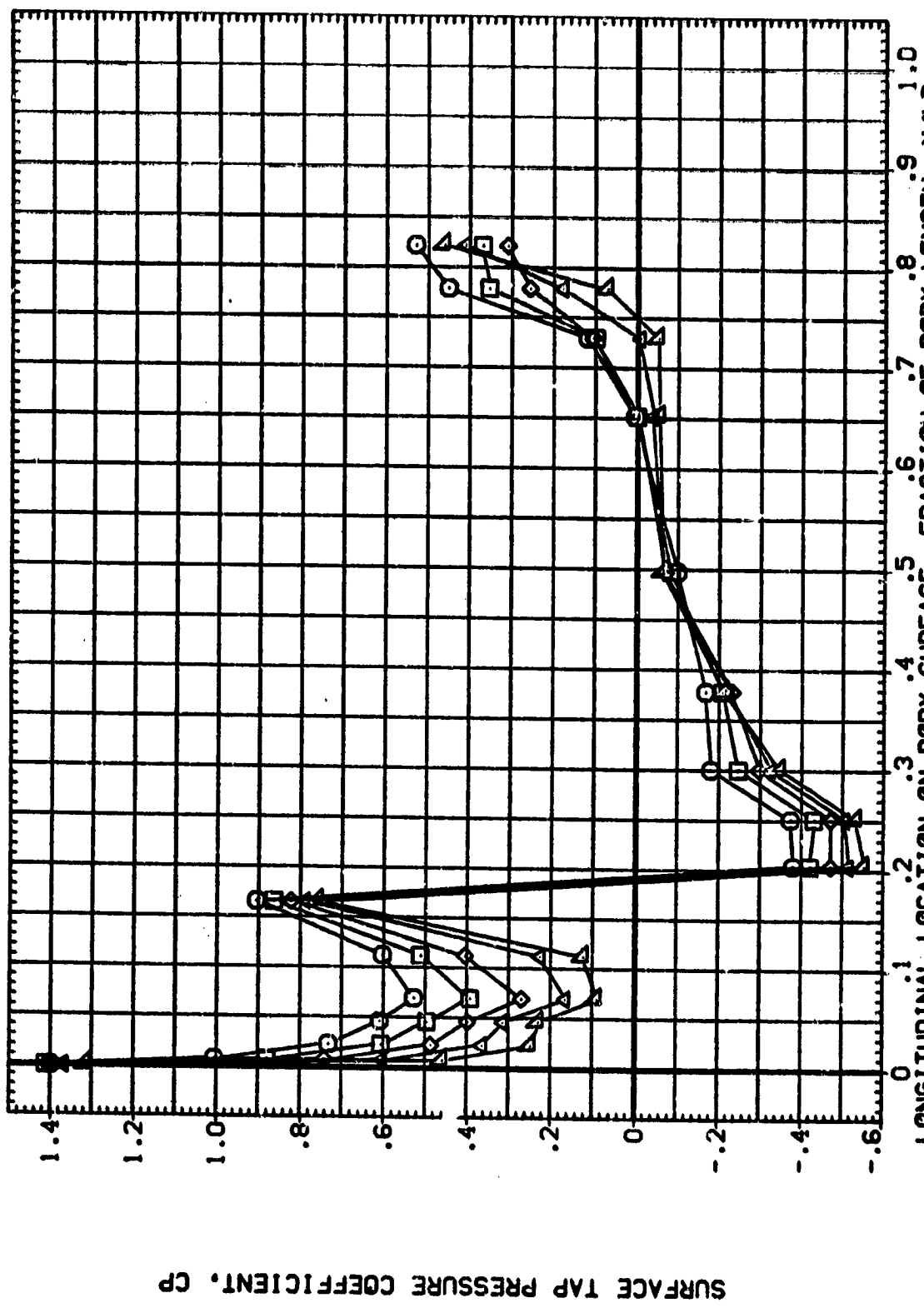


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A1148) -140A/B/C/R ORB FUSELAGE (IE8B14)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.020	.000	80° LAP	.000 SPDRK
◇	.000			R-ELVN	.000 L-ELVN
△	4.000				.000 MACH
▽	8.000				1.250
▽	12.000				

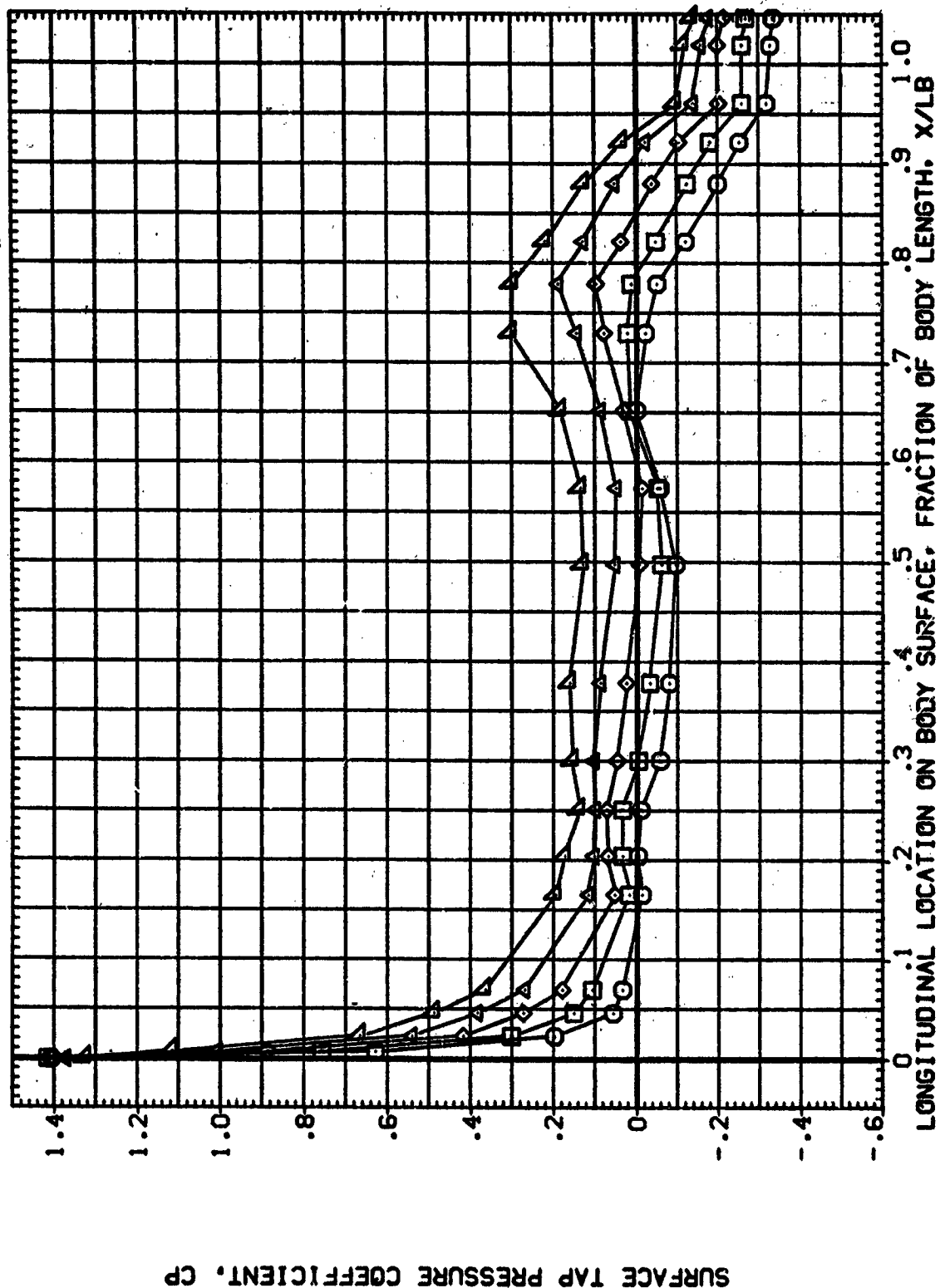


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

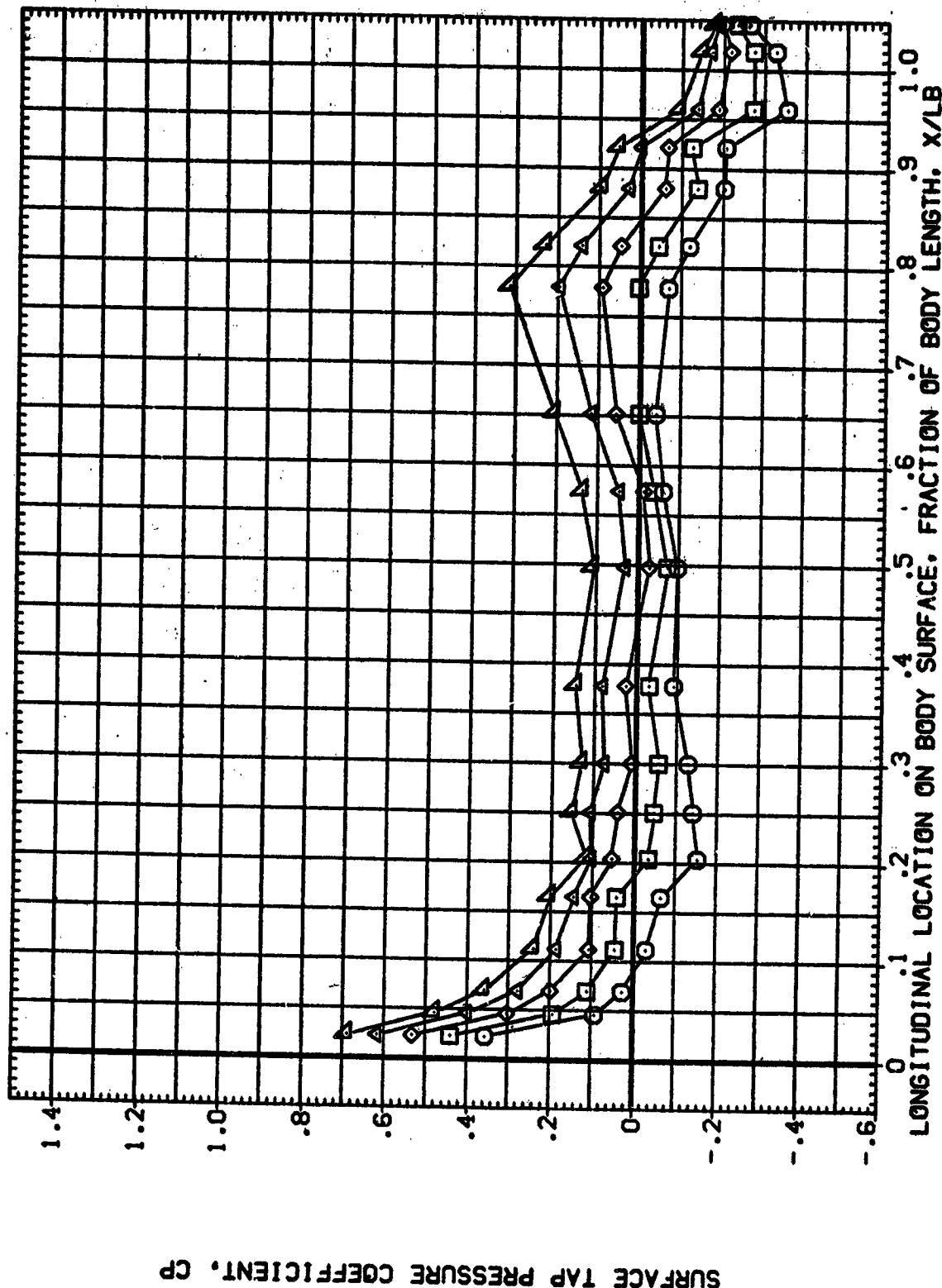
SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .200
 R-ELVN .000 MACH 1.250



AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B14)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 90.000

BETA
 .000

PARAMETRIC VALUES

RUDDER
 80FLAP
 R-ELVN

SP08RX
 .000
 .000

L-ELVN
 .000
 .000

MACH
 1.250

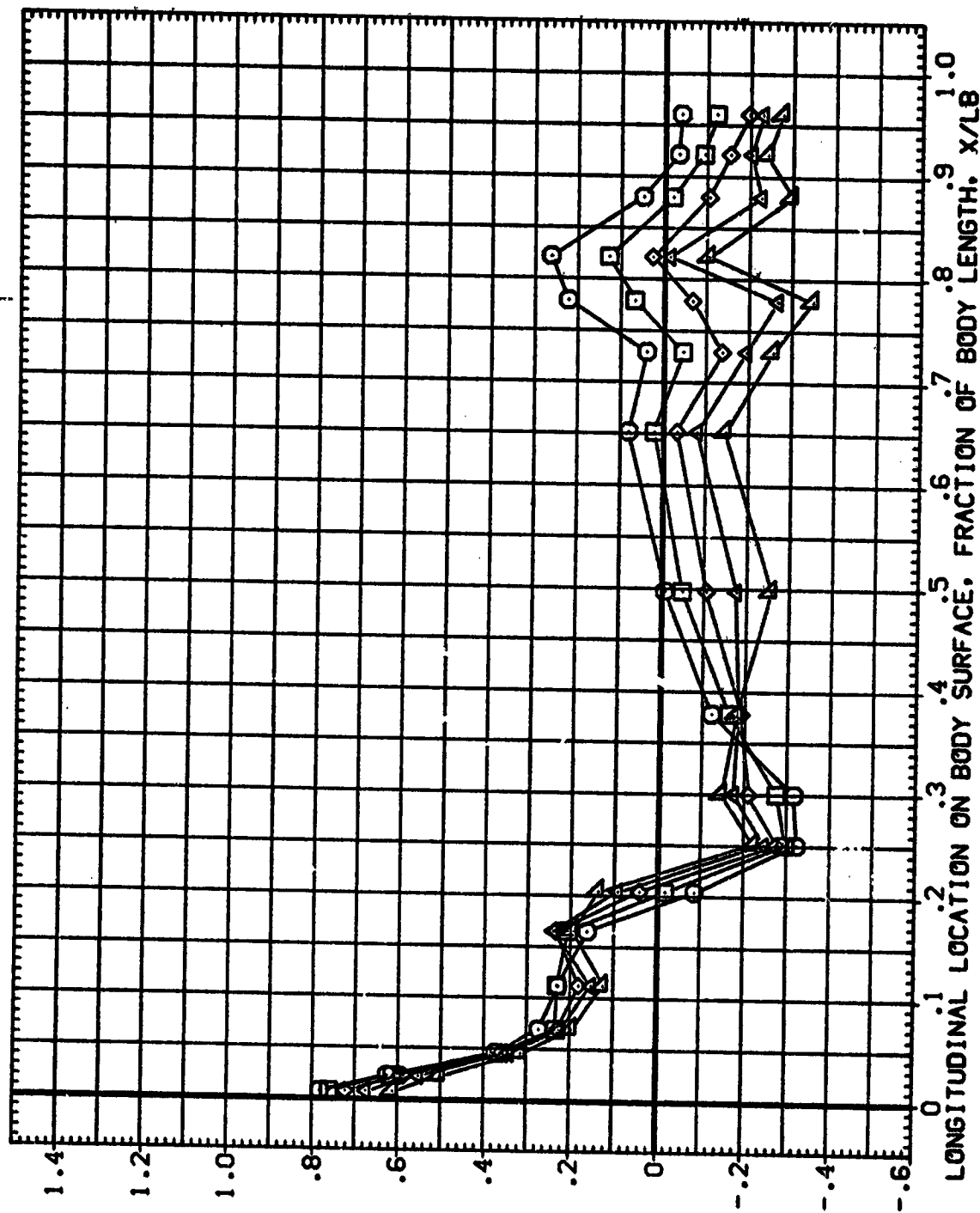


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 .000 SPDRK 35.000
 .000 L-ELVN .000
 .000 MACH 1.250

RUDER
 BOFLAP
 R-ELVN

ALPHA PHI BETA
 -4.000 120.000 .000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 △

SURFACE TAP PRESSURE COEFFICIENT, CP

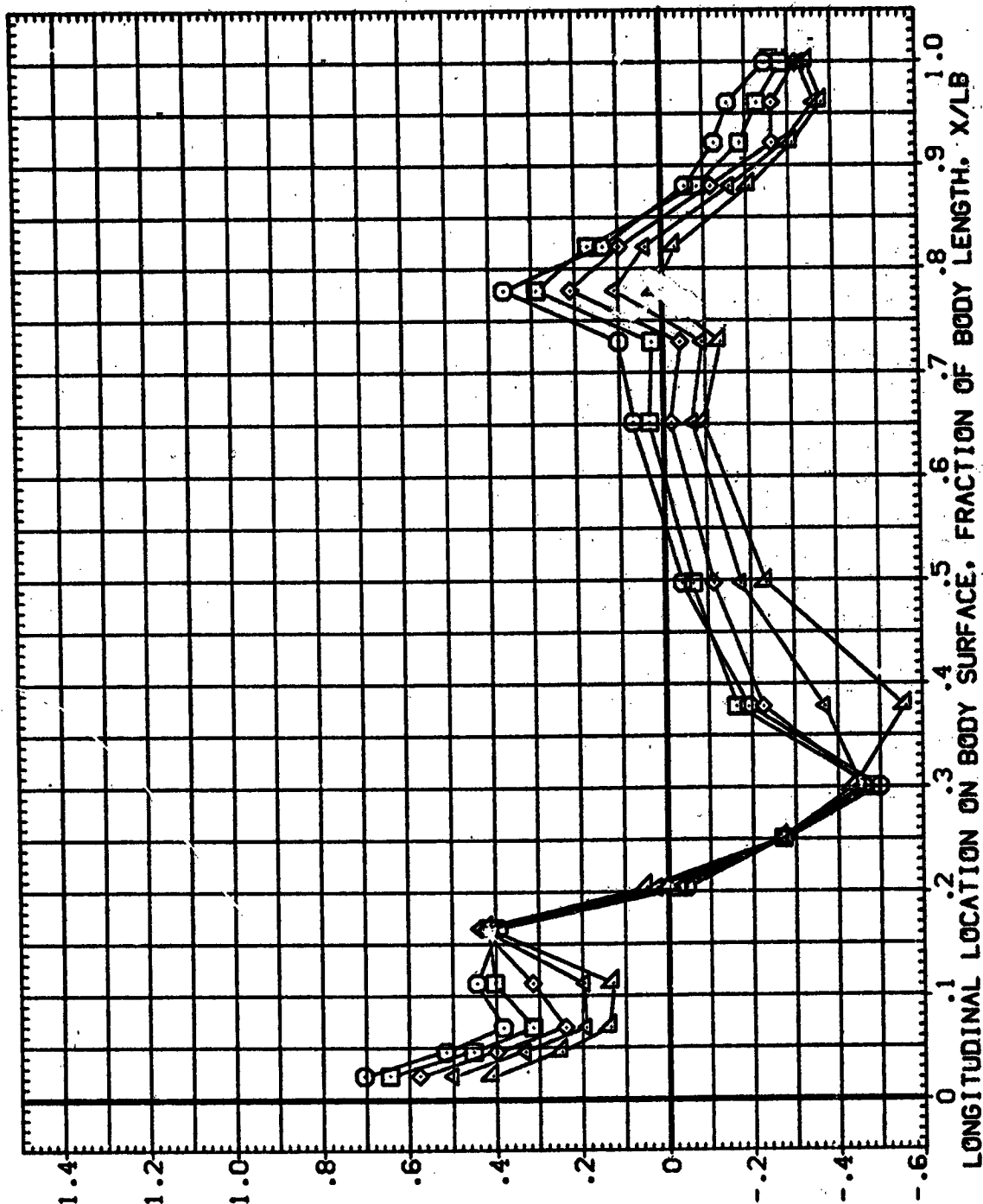


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B14)

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

ALPHA PHI BETA
 -4.000 150.000 .000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ○ □ ◇ △ ▽

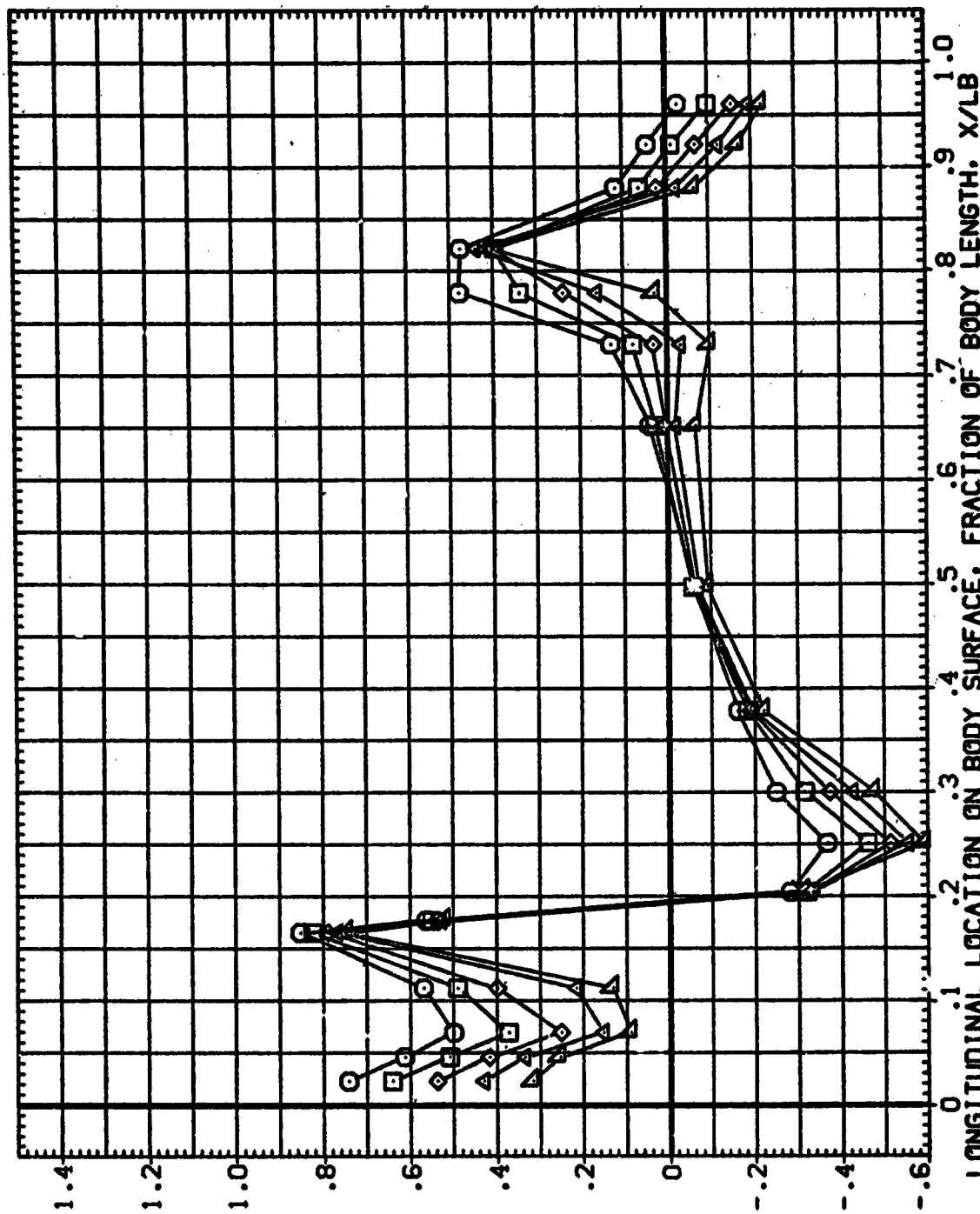
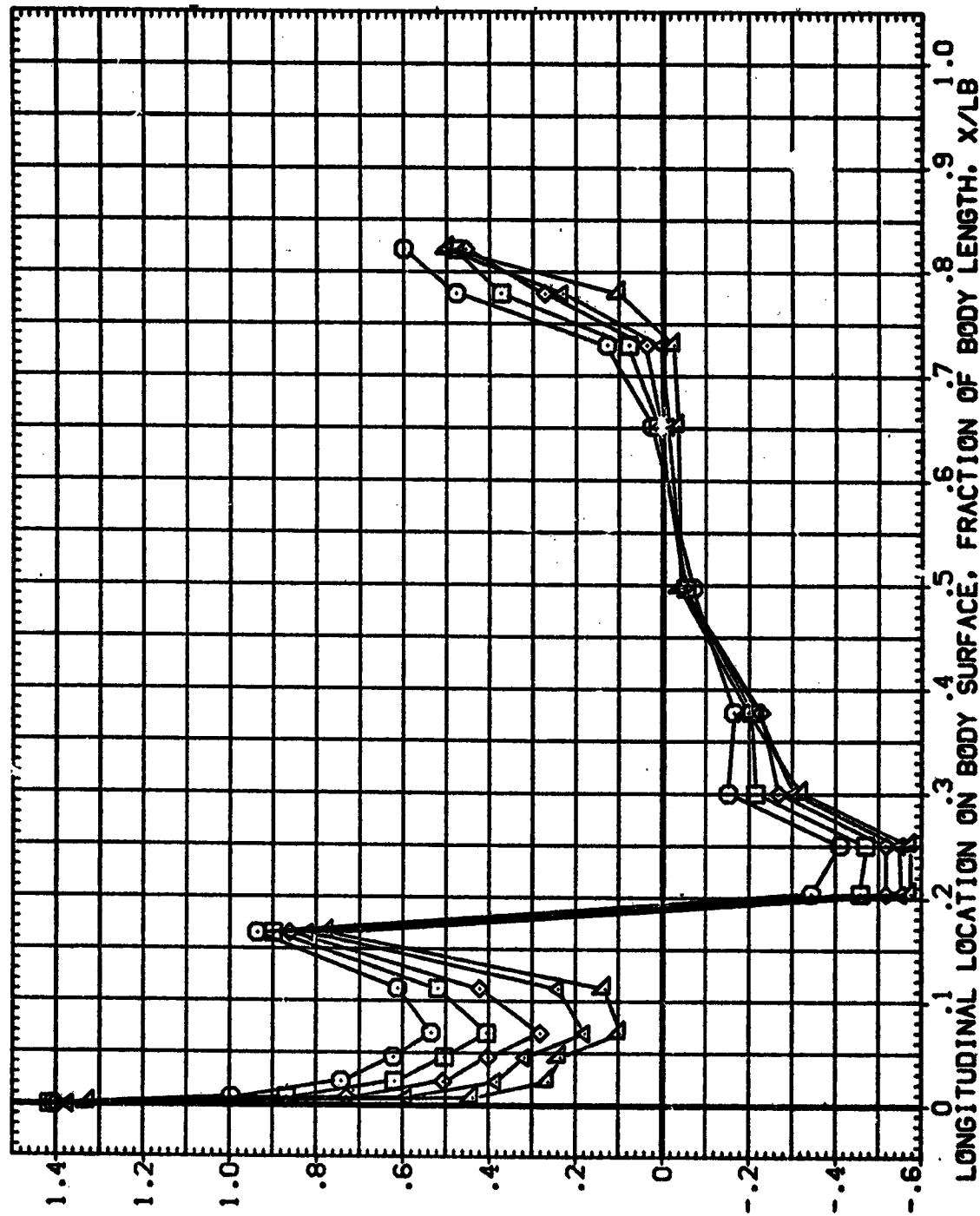


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

SYMBOL ALPHA PHI BETA
 -4.000 180.000 .000
 .000
 4.000
 8.000
 12.000



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8814)

PARAMETRIC VALUES
 RUDDER .000 SP08RK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

SYMBOL ALPHA PHI BETA
 ▽ -4.000 .000 4.000
 ◇ 4.000 .000 .000
 □ 8.000 .000 .000
 △ 12.000 .000 .000

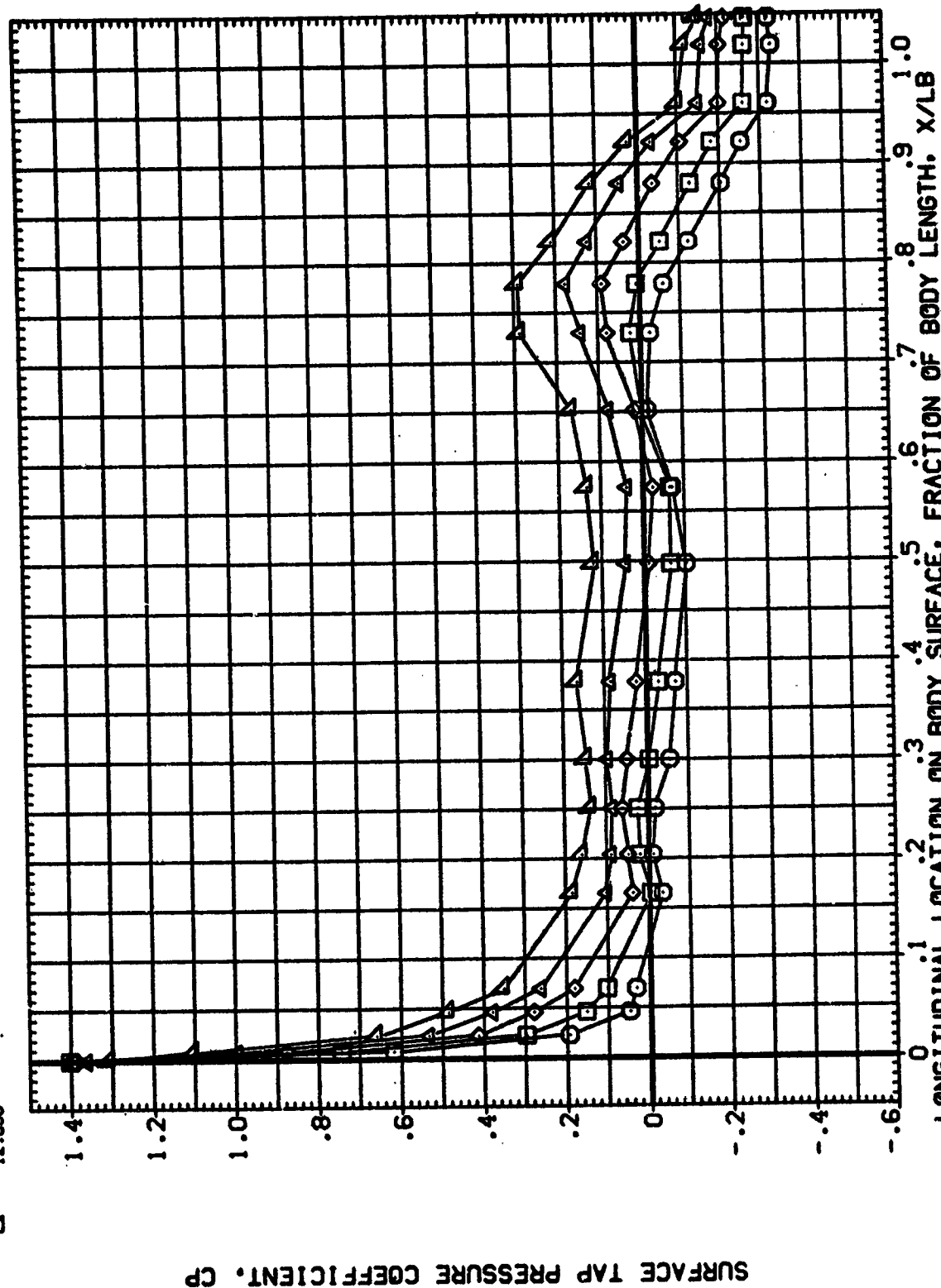


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 ○
 □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 4.000

PARAMETRIC VALUES

RUDDER	BDFLAP	R-ELVN	MACH	SPDSRRA	L-ELVN	MACH
.000	.000	.000	1.250	.000	.000	.000

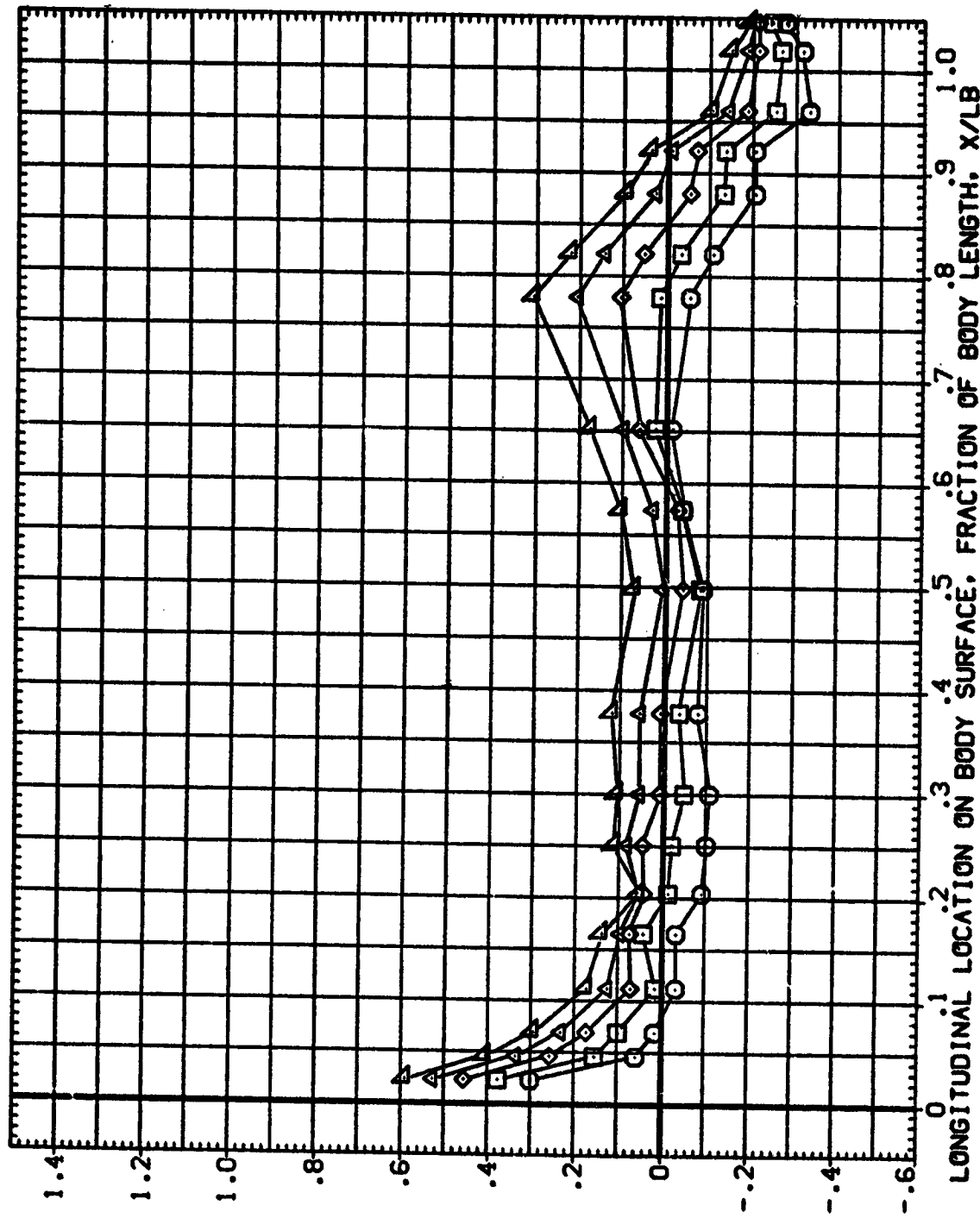


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8814)

SYMBOL	ALPHA	PHI	BETA	RUDDER	SPORRK	PARAMETRIC VALUES
○	-4.000	90.000	4.000	BOFLAP	.000	35.000
□	.000			R-ELVN	.000	.000
◇	4.000				L-ELVN	.000
△	8.000				MACH	1.250
▽	12.000					

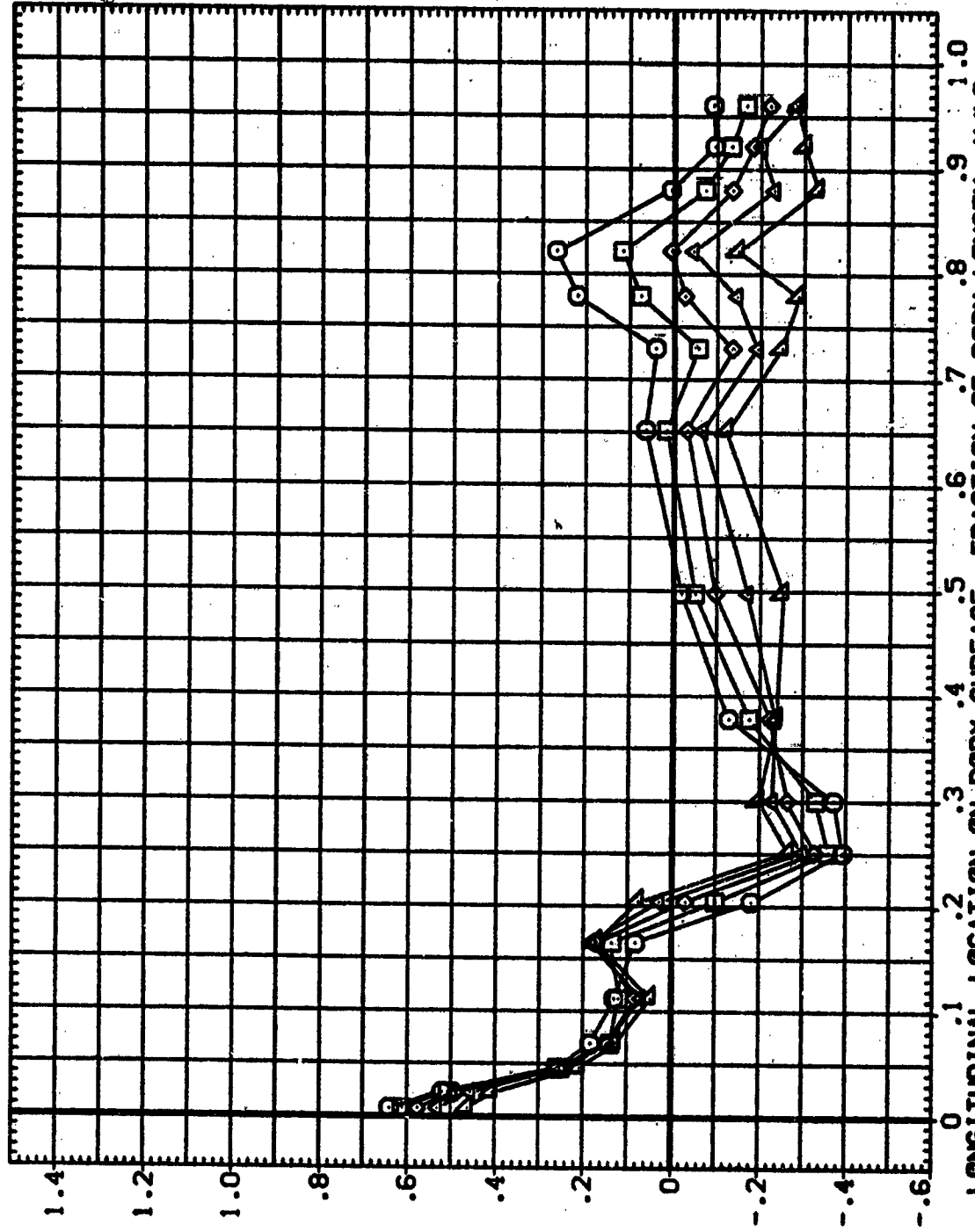


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 △
 ○

ALPHA -4.000
 PHI 120.000
 BETA 4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 SPDRNK 35.000
 L-ELVN .000
 MACH 1.250

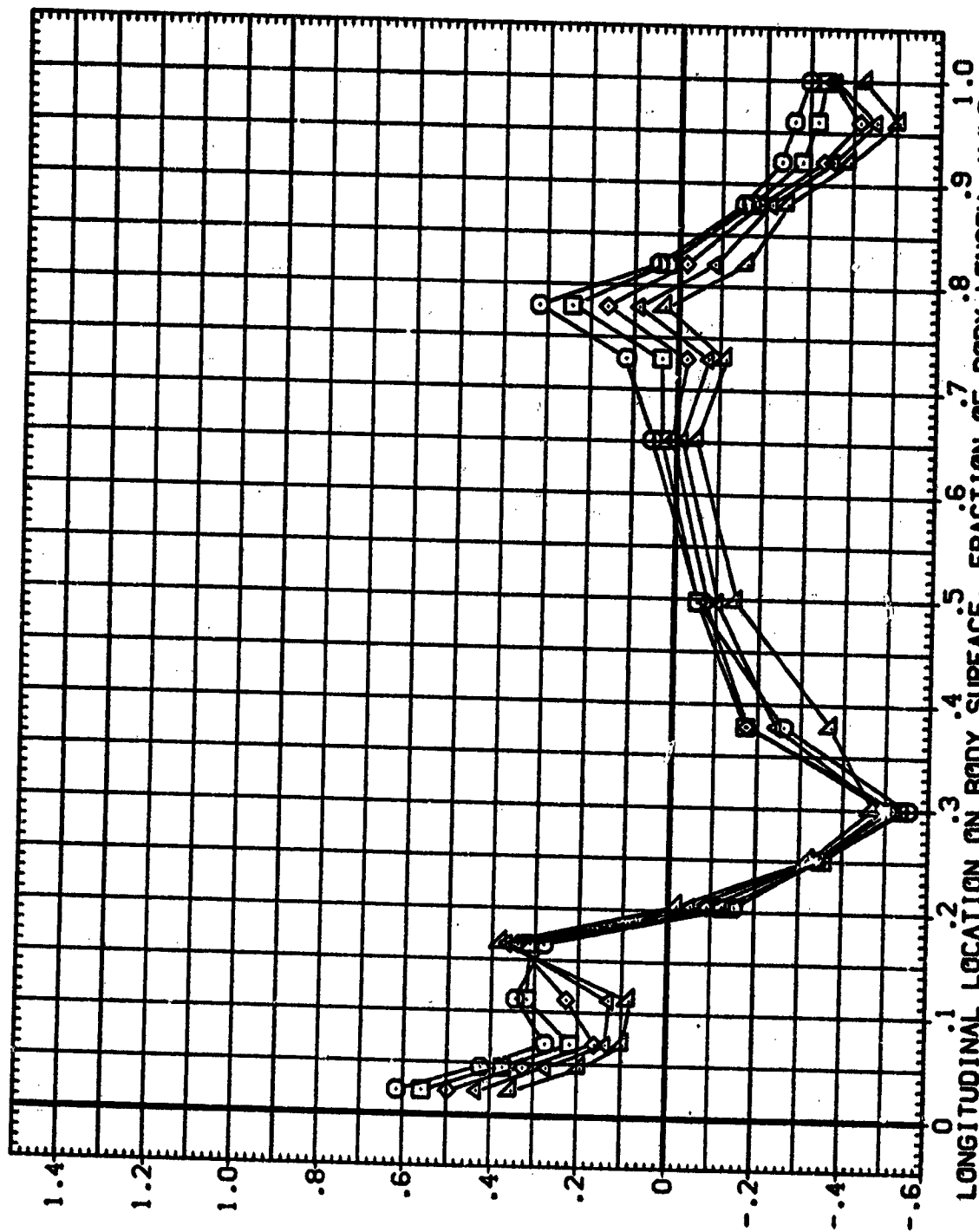


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B14)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRK	L-ELVN	MACH
○	-4.000	150.000	4.000	.000	.000	.000	35.000
□	.000			.000	.000	.000	.000
◇	4.000			.000	.000	.000	1.250
△	8.000			.000	.000	.000	
▽	12.000						

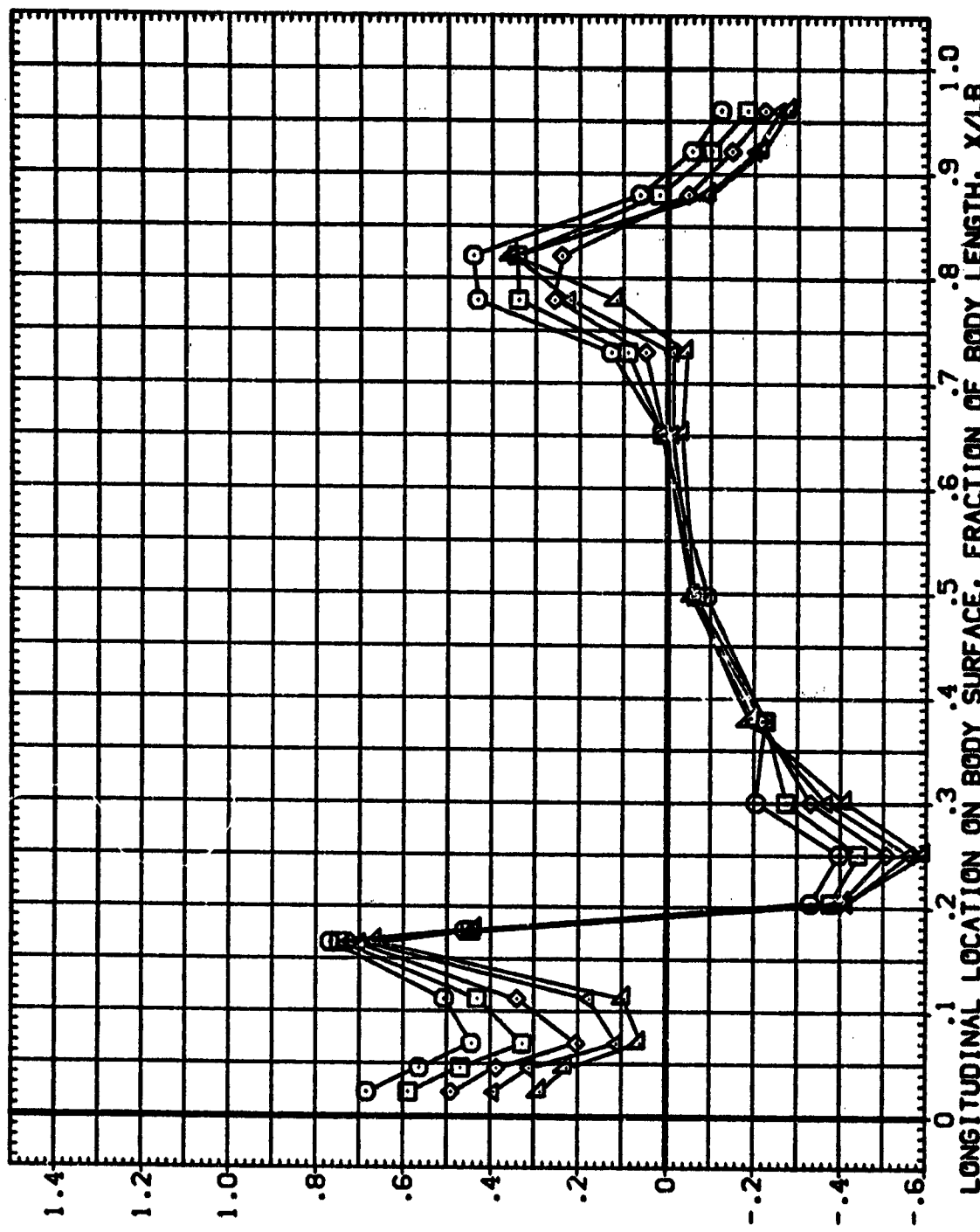


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

(1E8B14)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SYMBOL
□ ◇ △

ALPHA PHI BETA
-4.000 180.000 4.000
.000
4.000
8.000
12.000

PARAMETRIC VALUES
RUDDER .000 SPDRBY 35.000
BDFLAP .000 L-ELVN .000
R-ELVN .000 MACH 1.250

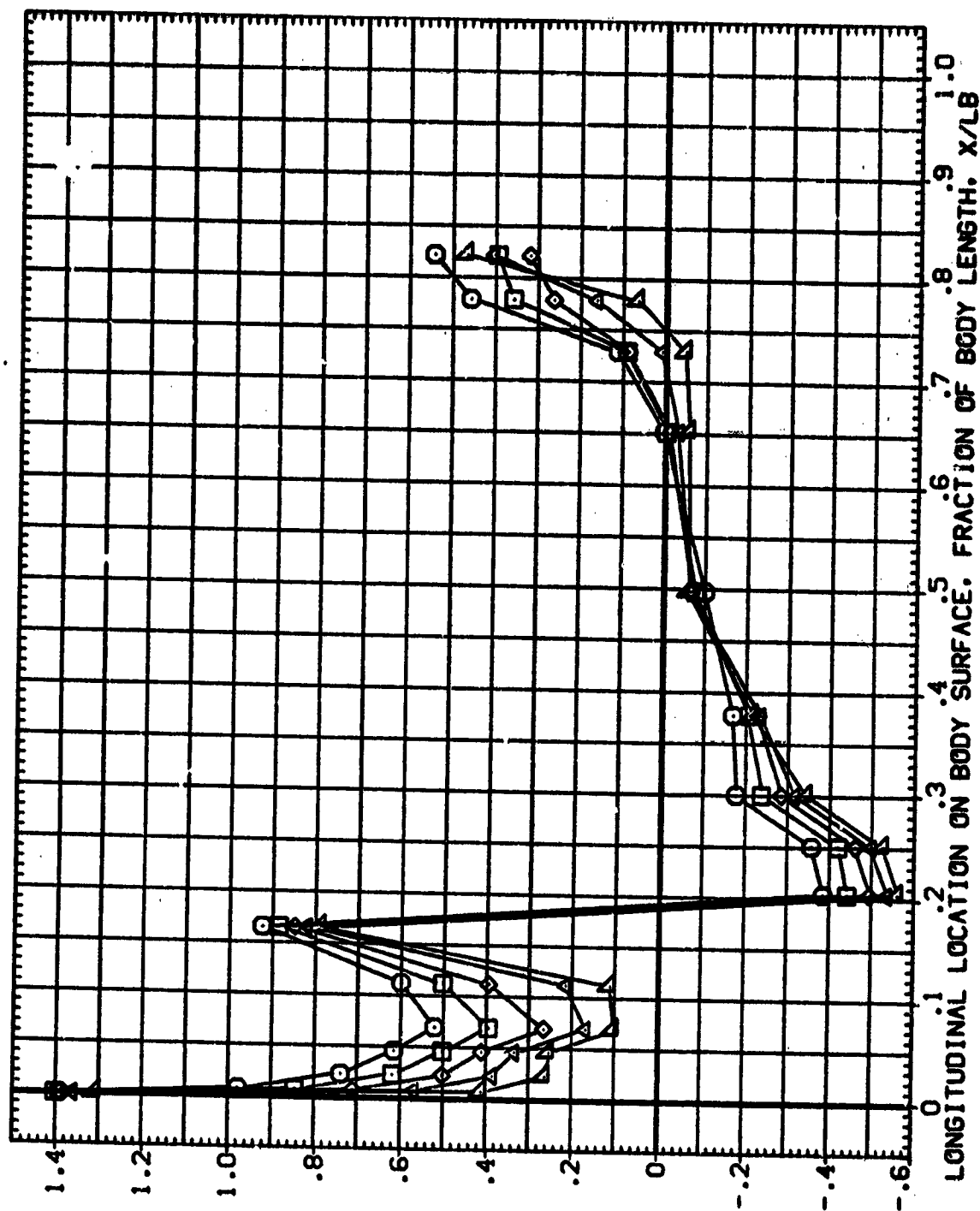


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

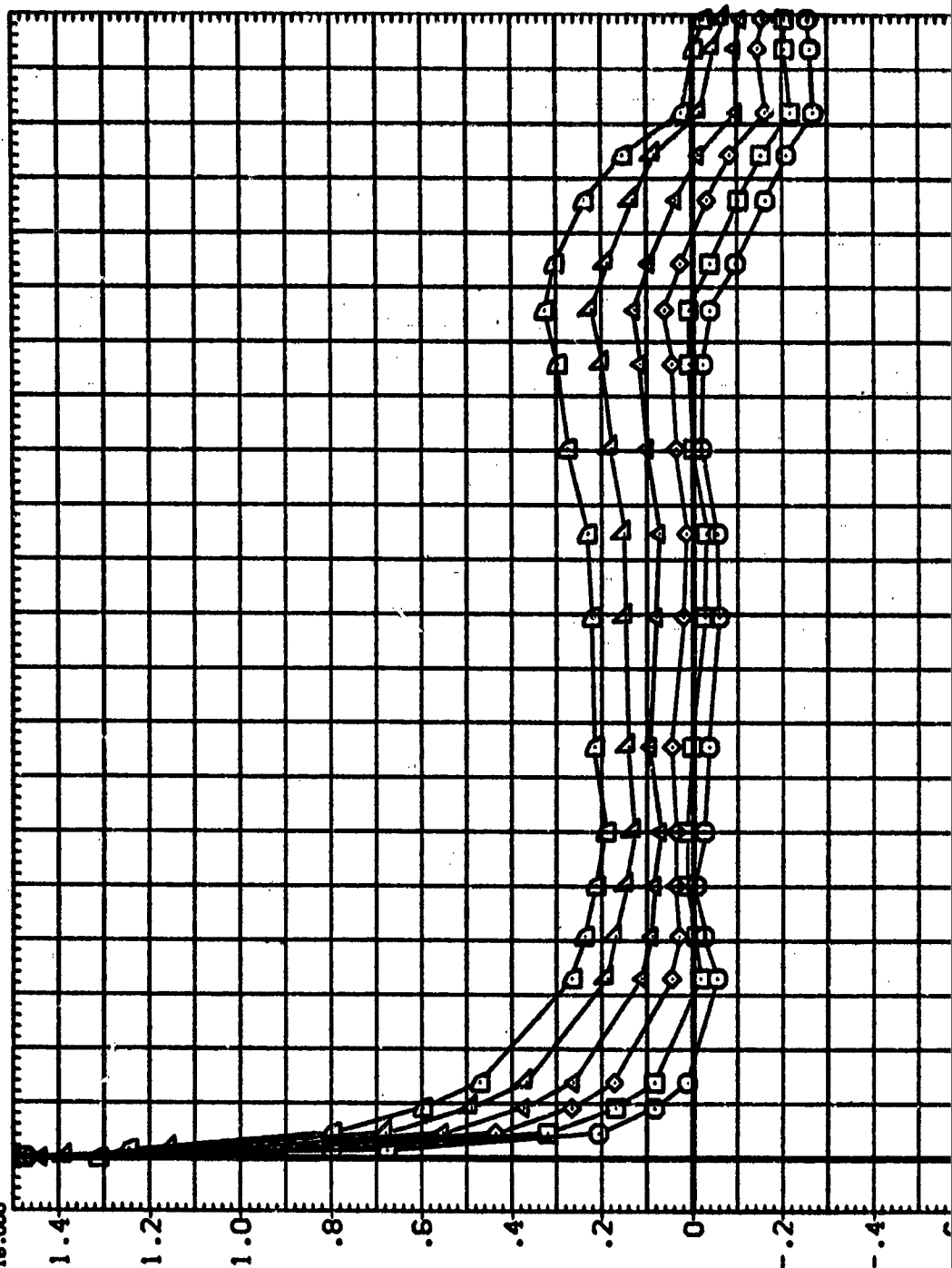
AMES 11-073(OA148) -140A/B/C/R ORB FUSELAGE (IE8B13)

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 SPDRBK 35.000
 L-ELVN .000
 MACH 1.400

ALPHA -4.000
 PHI .000
 BETA -4.000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ▽
 ▴
 ◇
 □
 ○

SURFACE TAP PRESSURE COEFFICIENT, CP



AMES 11-07340A148J - 140X/8/0/0 ORB FUSELAGE

1180019J

SYMBOL
□
◇
△
○
□

ALPHA
-4.000
.000
4.000
8.000
12.000
16.000

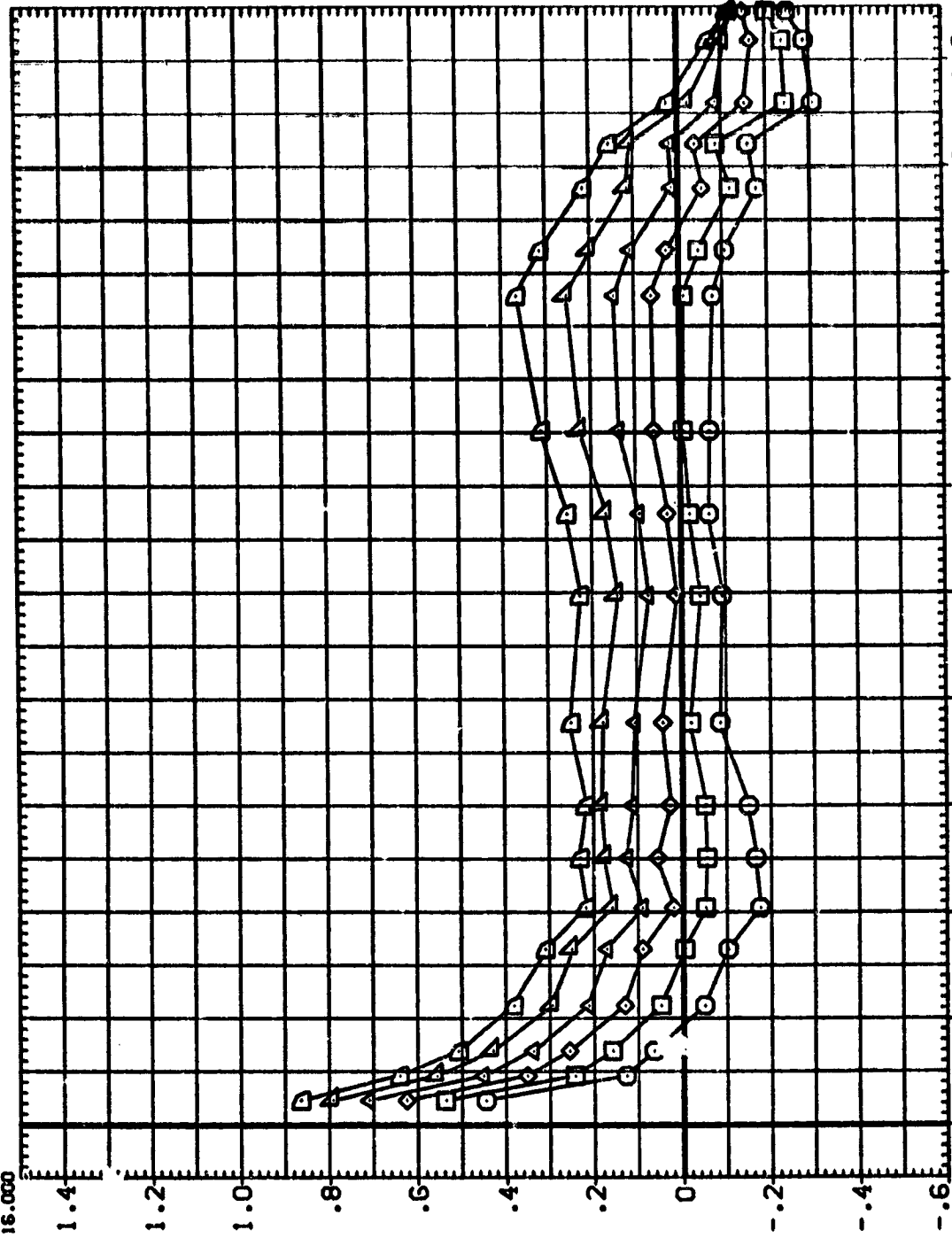
PHI
40.000

BETA
-4.000

PARAMETRIC VALUES
RUDDER
BOFLAP
R-ELVN

.000
.000
.000

35.000
.000
1.400



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B13)

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA PHI BETA
 -4.000 90.000 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◆ ◇ △ ▽ ▹ ▸

SURFACE TAP PRESSURE COEFFICIENT, CP

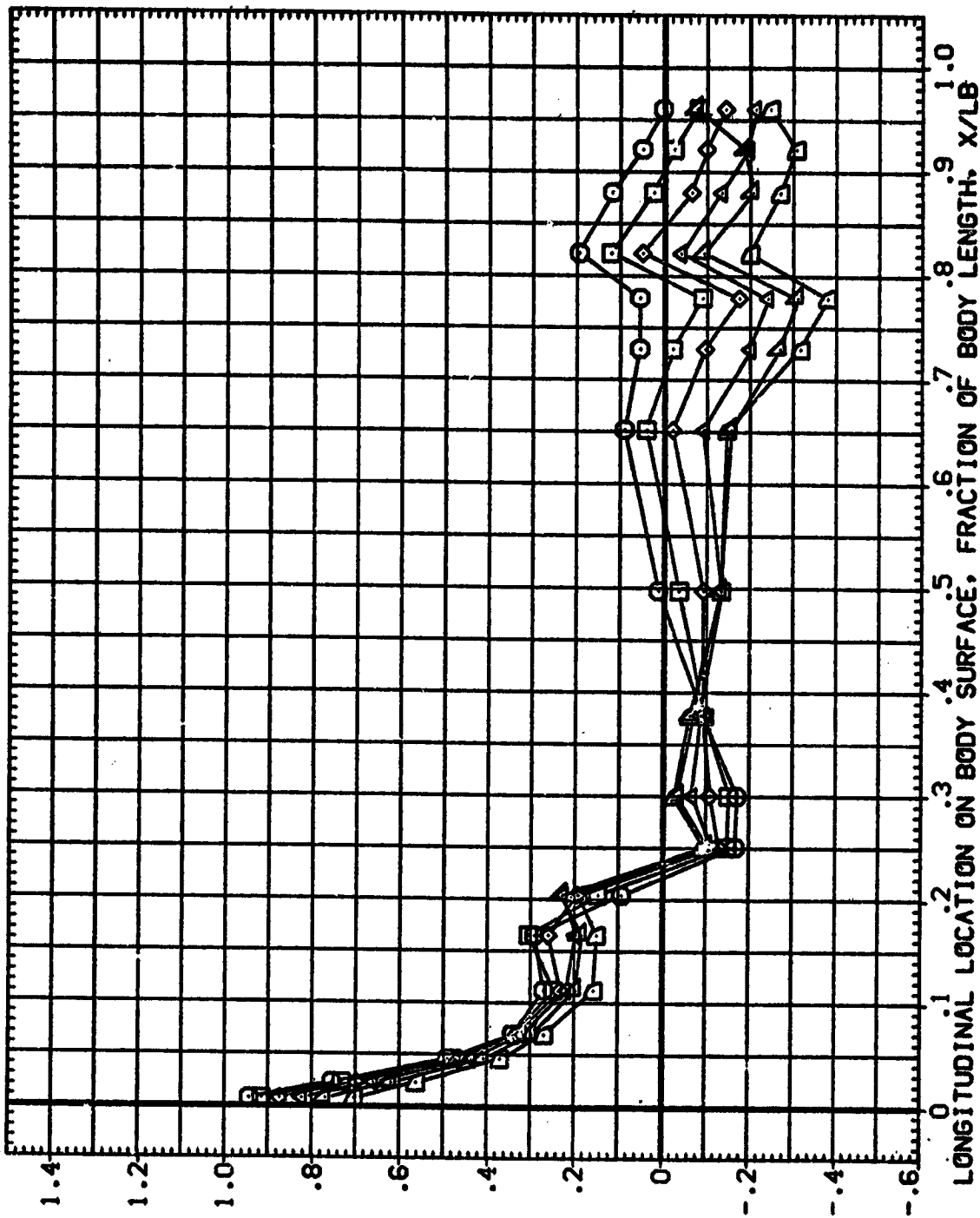


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL

ALPHA -4.000
PHI 120.000
BETA -4.000

PARAMETRIC VALUES
RUDDER .000
BOFLAP .000
R-ELVN .000

SPDRBK 35.000
L-ELVN .000
MACH 1.400

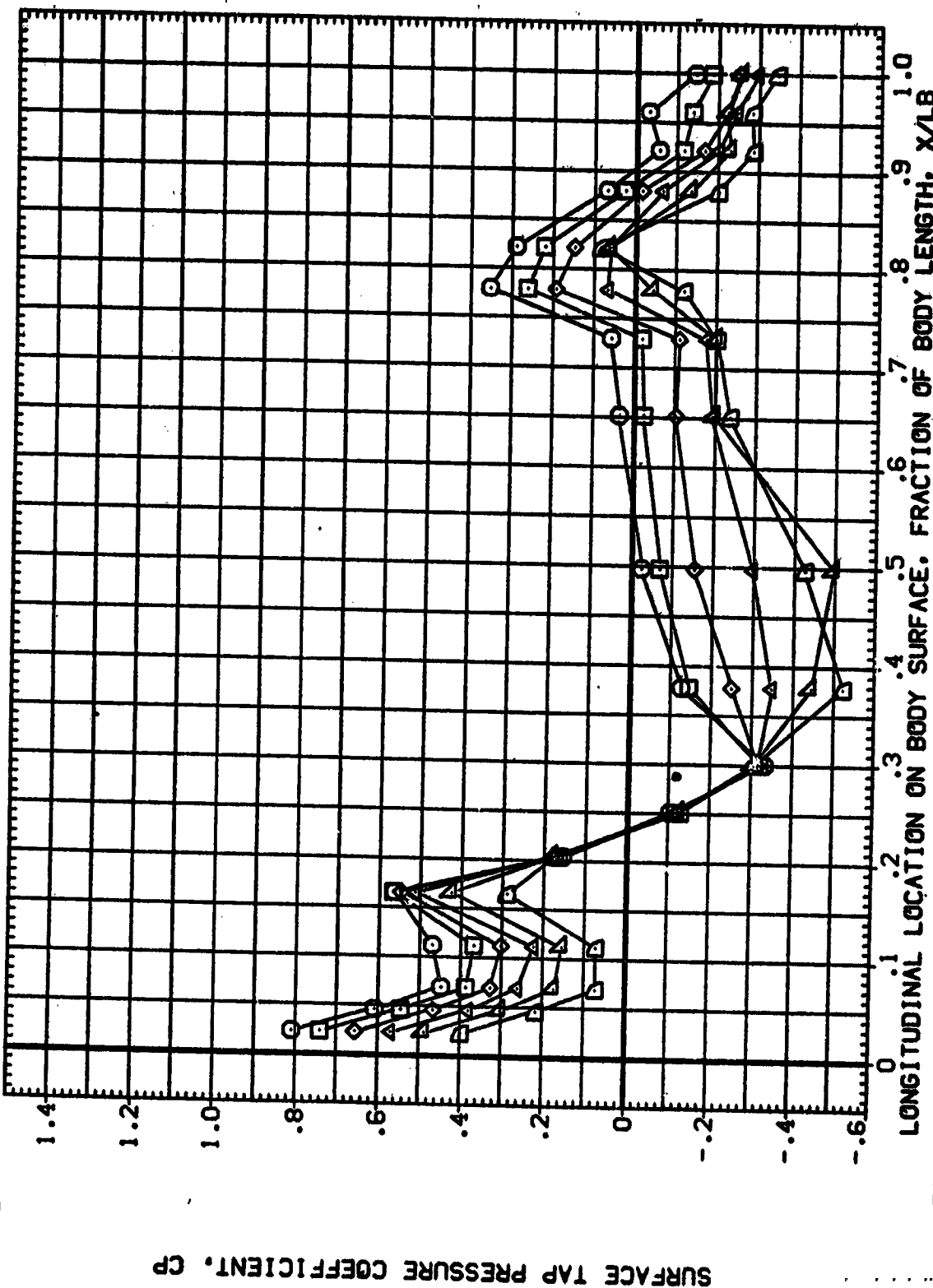


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(IE8B13)

ALPHA	PHI	BETA	PARAMETRIC VALUES
-4.000	150.000	-4.000	RUDDER
.000			80FLAP
4.000			R-ELVN
8.000			
12.000			
16.000			
			SPDRK
			L-ELVN
			MACH
			35.000
			.000
			1.400

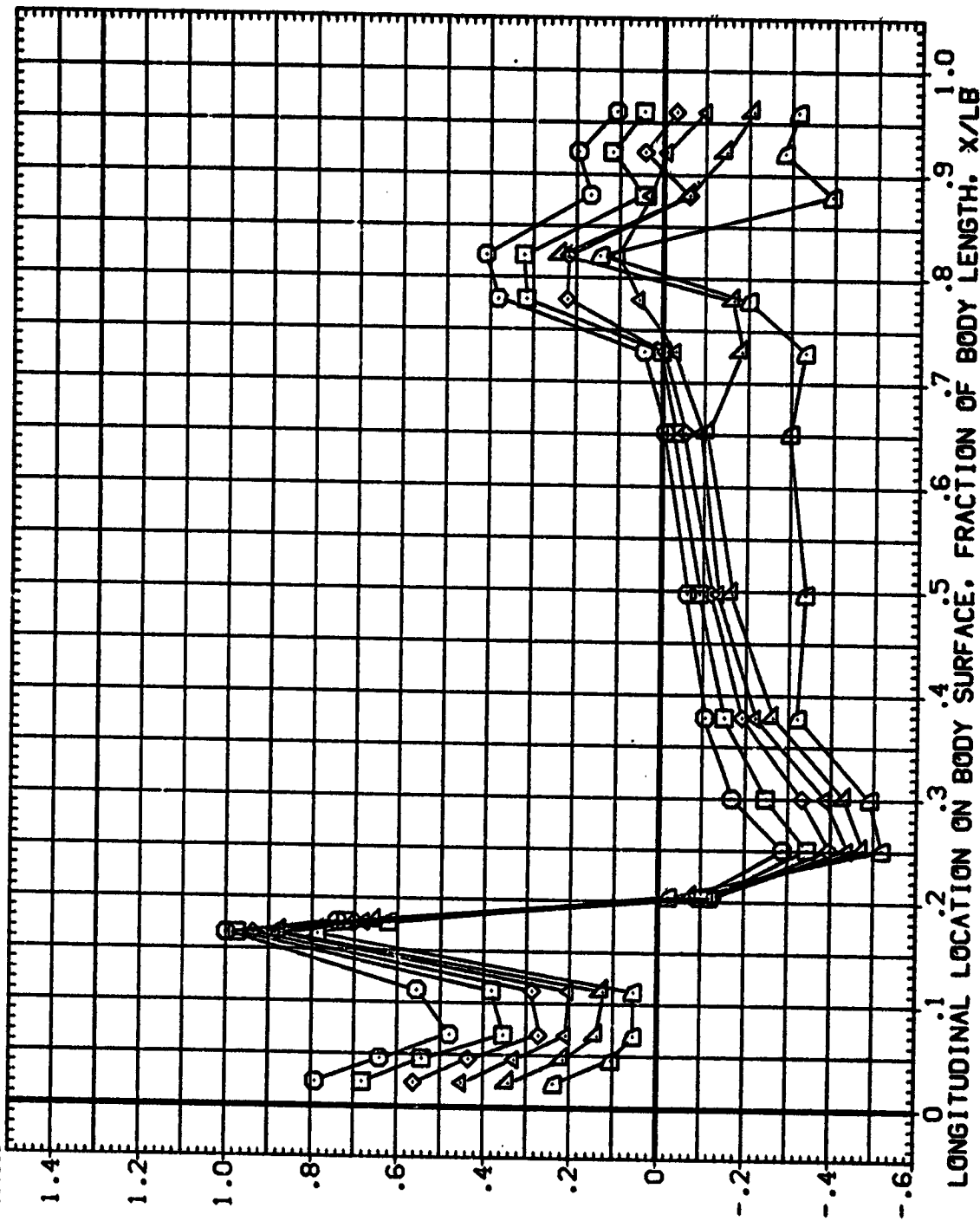


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRX 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA PHI BETA
 -4.000 180.000 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ ○ △

SURFACE TAP PRESSURE COEFFICIENT, CP

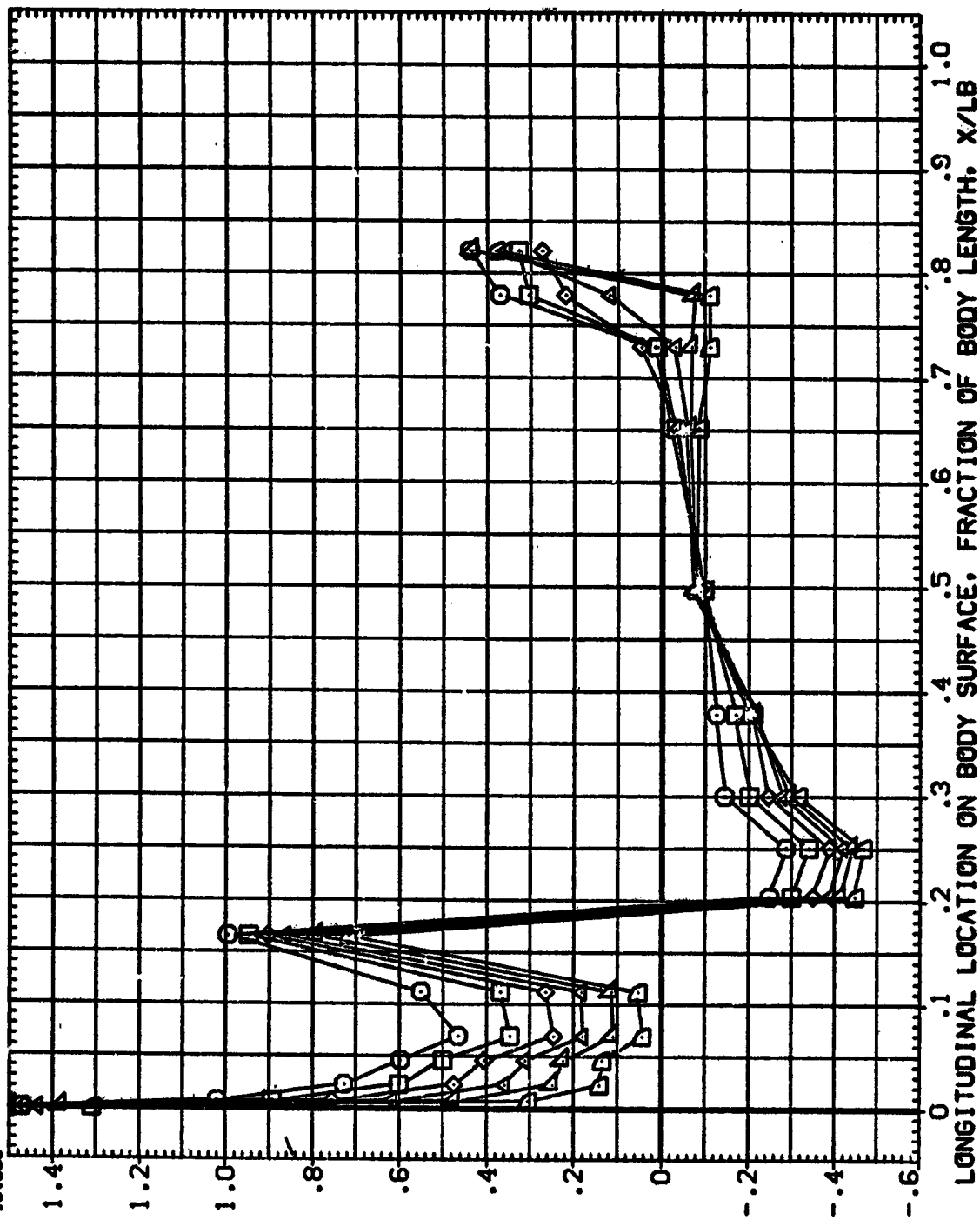


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B13)

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 80FLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA PHI BETA
 -4.000 .000 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ▽ ▴ ◊ □

SURFACE TAP PRESSURE COEFFICIENT, CP

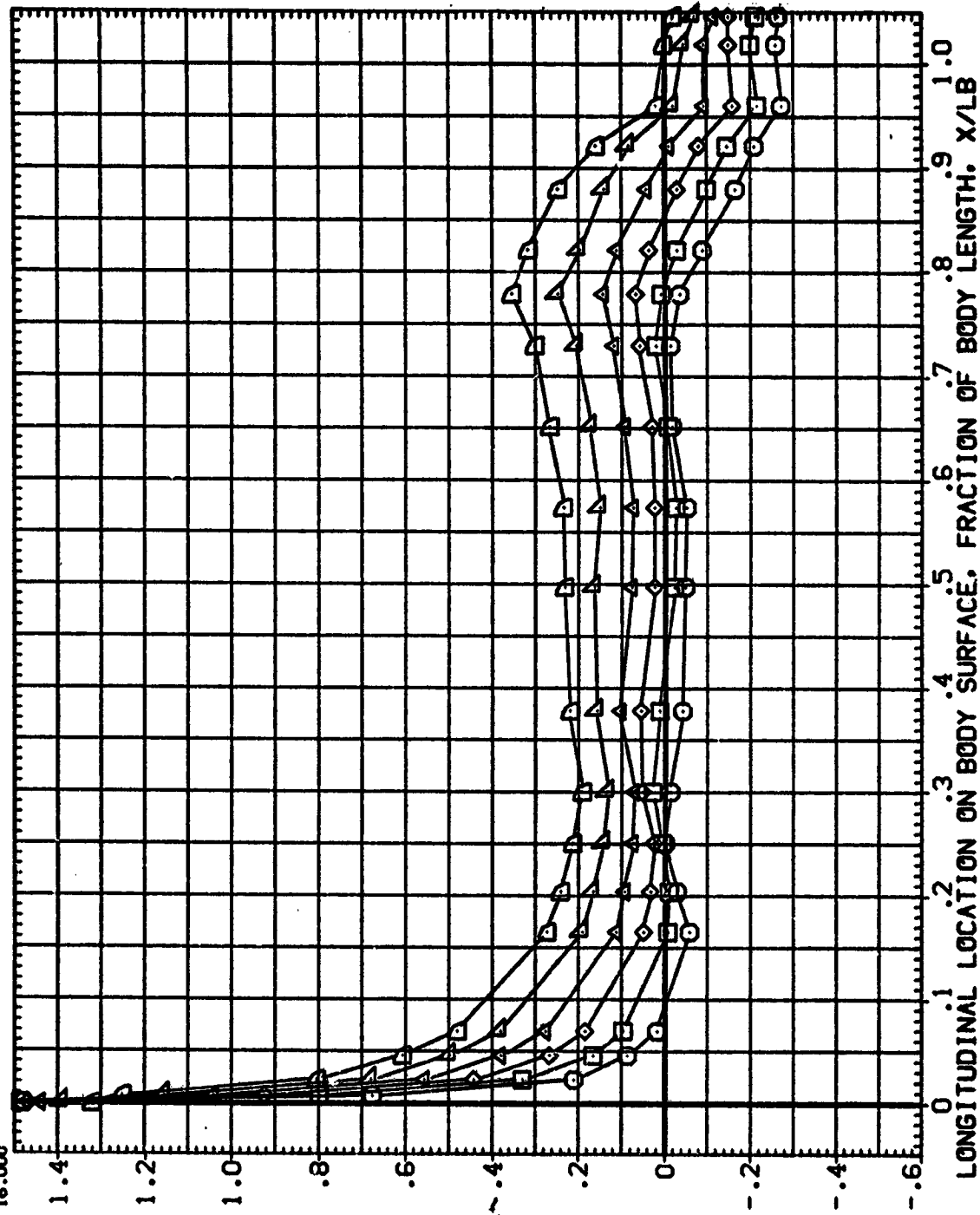


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(8A148) - 140A/B/C/D/R ORBITER FUSELAGE (188813)

SYMBOL
□ ▽ ▴ ◇ ○

ALPHA
-4.000
.000
4.000
8.000
12.000
16.000

PHI
40.000

BETA
.000

PARAMETRIC VALUES
RUDDER .000 SPDRSK 35.000
BOFLAP .000 L-ELVN .000
R-ELVN .000 MACH 1.400

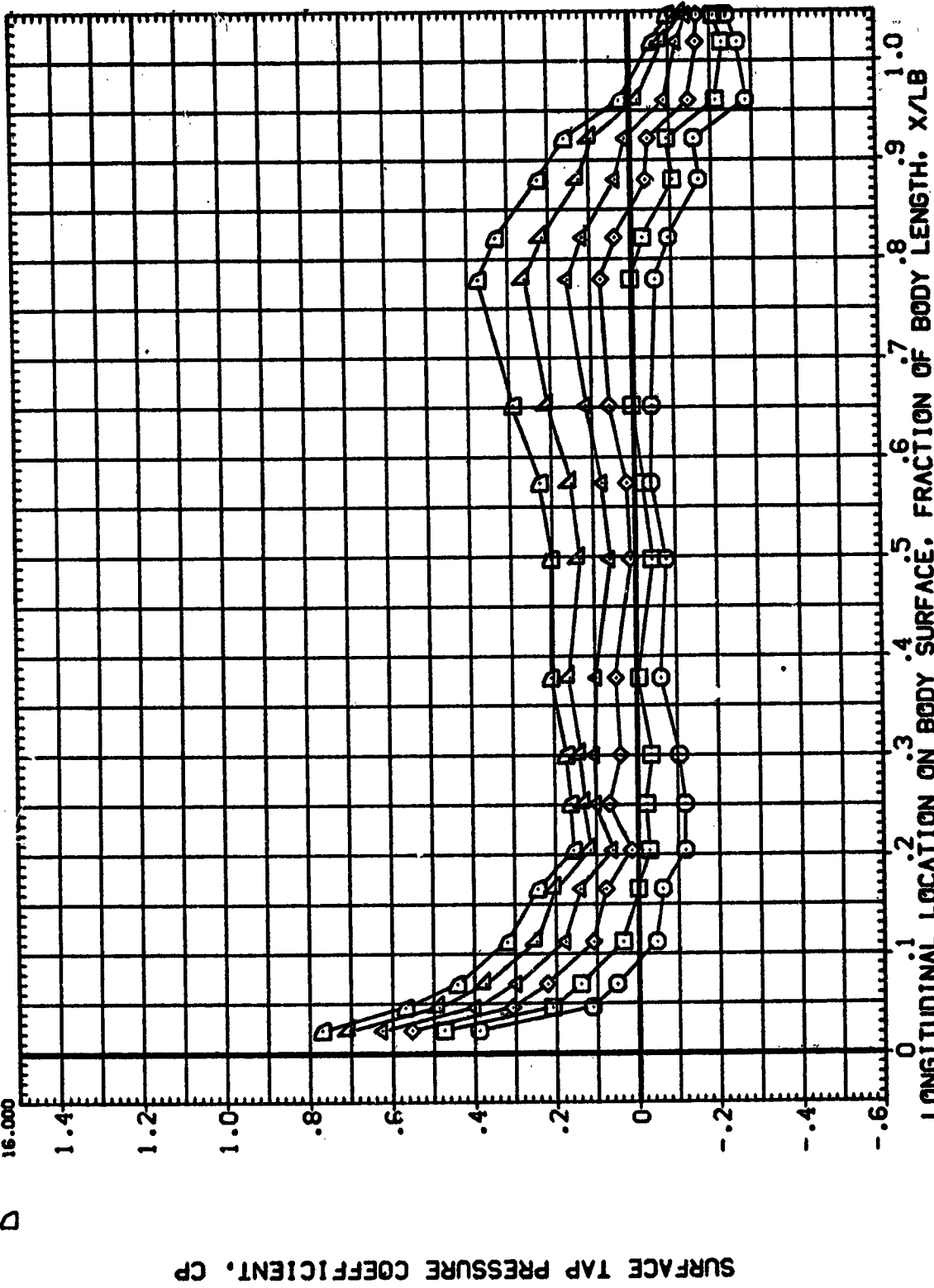


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B13)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
□	-4.000	90.000	.000	RUDDER .000
◇	.000	.000	.000	BDFLAP .000
△	4.000	.000	.000	L-ELVN .000
▽	8.000	.000	.000	R-ELVN .000
○	12.000	.000	.000	MACH 1.400
□	16.000	.000	.000	

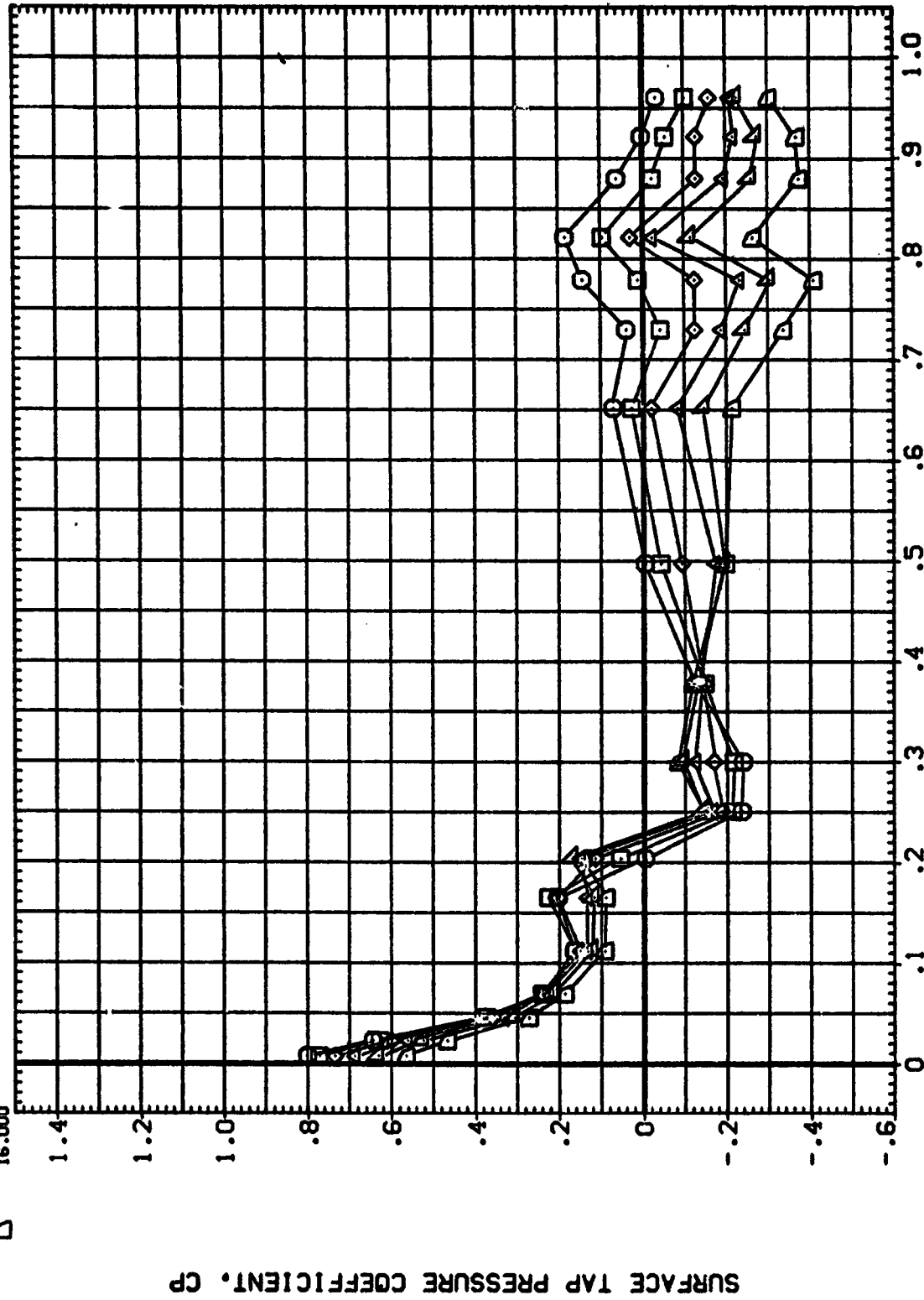


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 □
 ◇
 △
 ▽
 ○

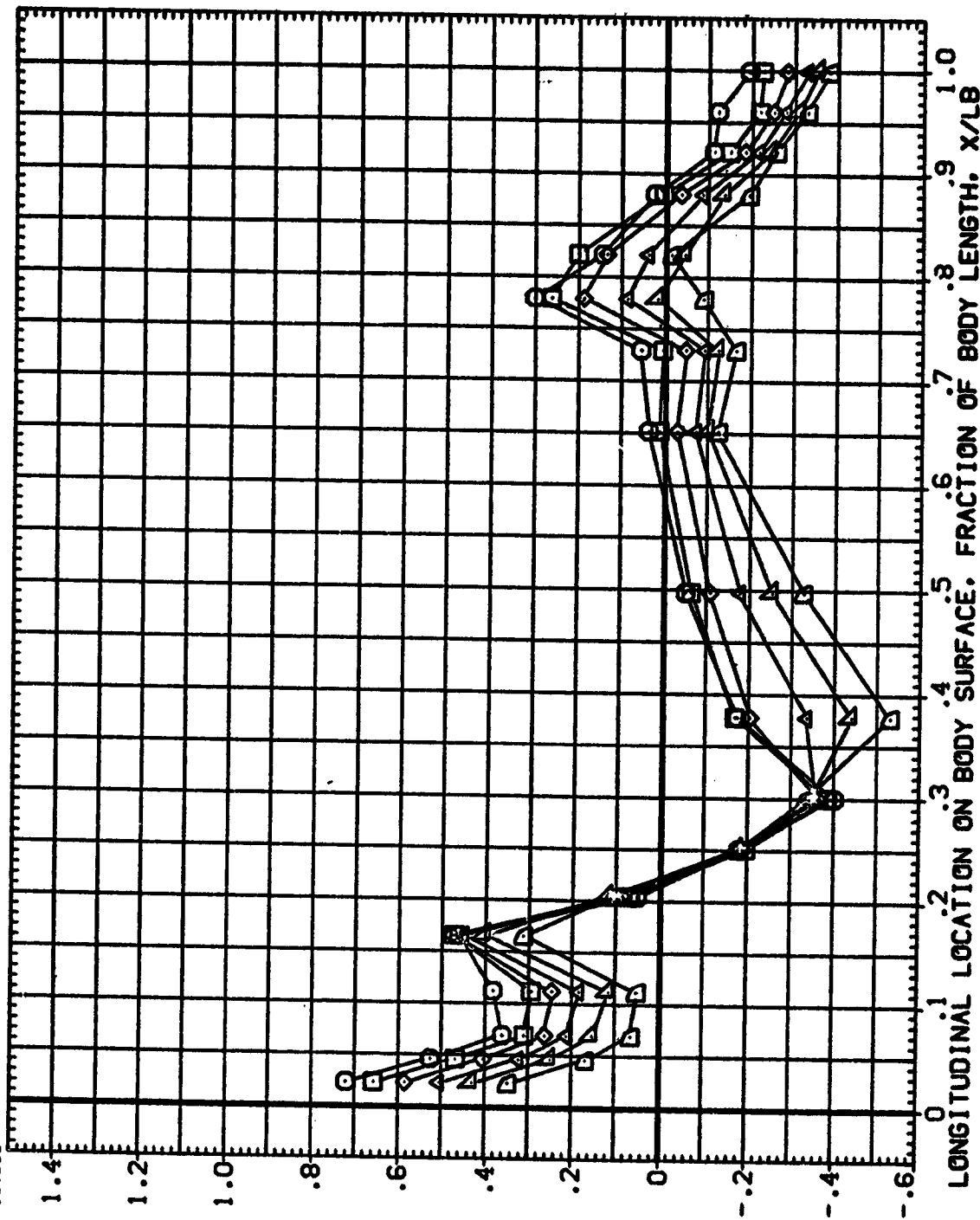
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

PHI
 120.000

BETA
 .000

PARAMETRIC VALUES

RUDDER	SPDRK	35.000
BOFLAP	.000	.000
R-ELVN	.000	1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B13)

SYMBOL	ALPHA	PNI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRBY	L-ELVN	MACH
▽	-4.000	150.000	.000					.000		35.000
△	.000							.000		.000
◇	4.000							.000		1.400
□	8.000									
	12.000									
	16.000									

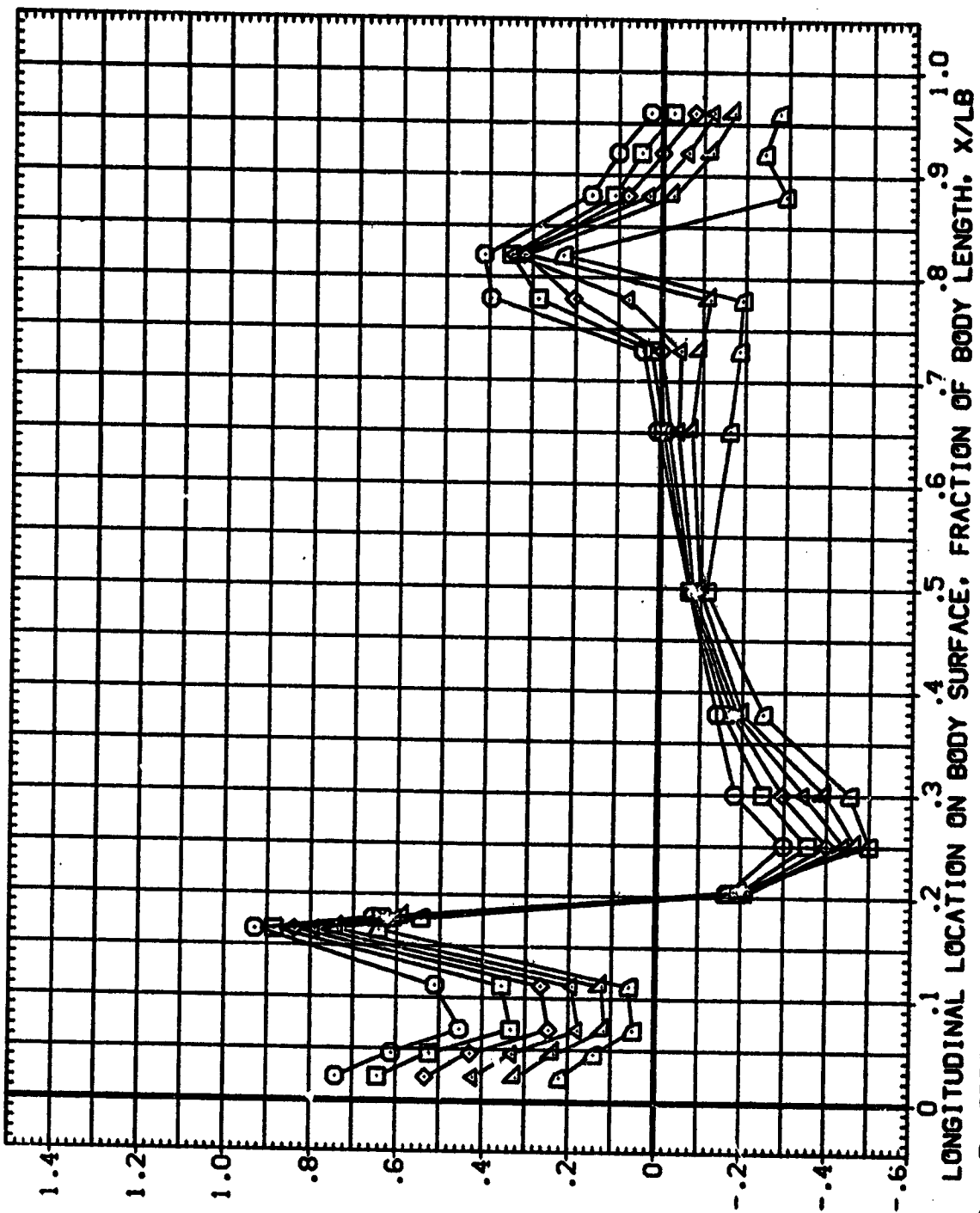


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL
 □ ◇ △ ○

ALPHA PHI BETA
 -4.000 180.000 .000
 .000
 4.000
 8.000
 12.000
 16.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

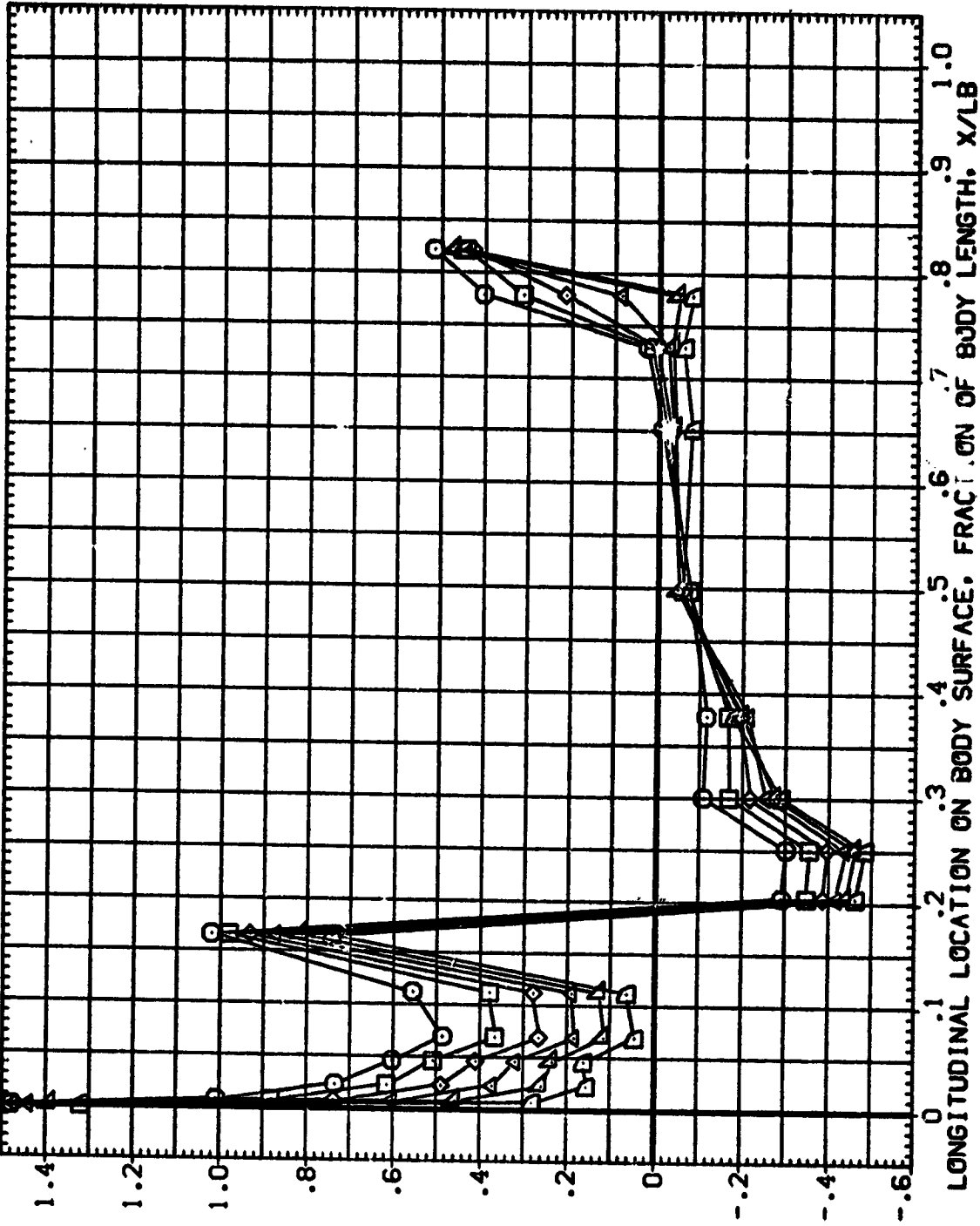


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B13)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.000	4.000	BOFLAP	.000 SPDRKT
◇	.000	.000	.000	R-ELVN	.000 L-ELVN
△	4.000	.000	.000		1.400 MACH
▽	8.000				
▽	12.000				
▽	16.000				

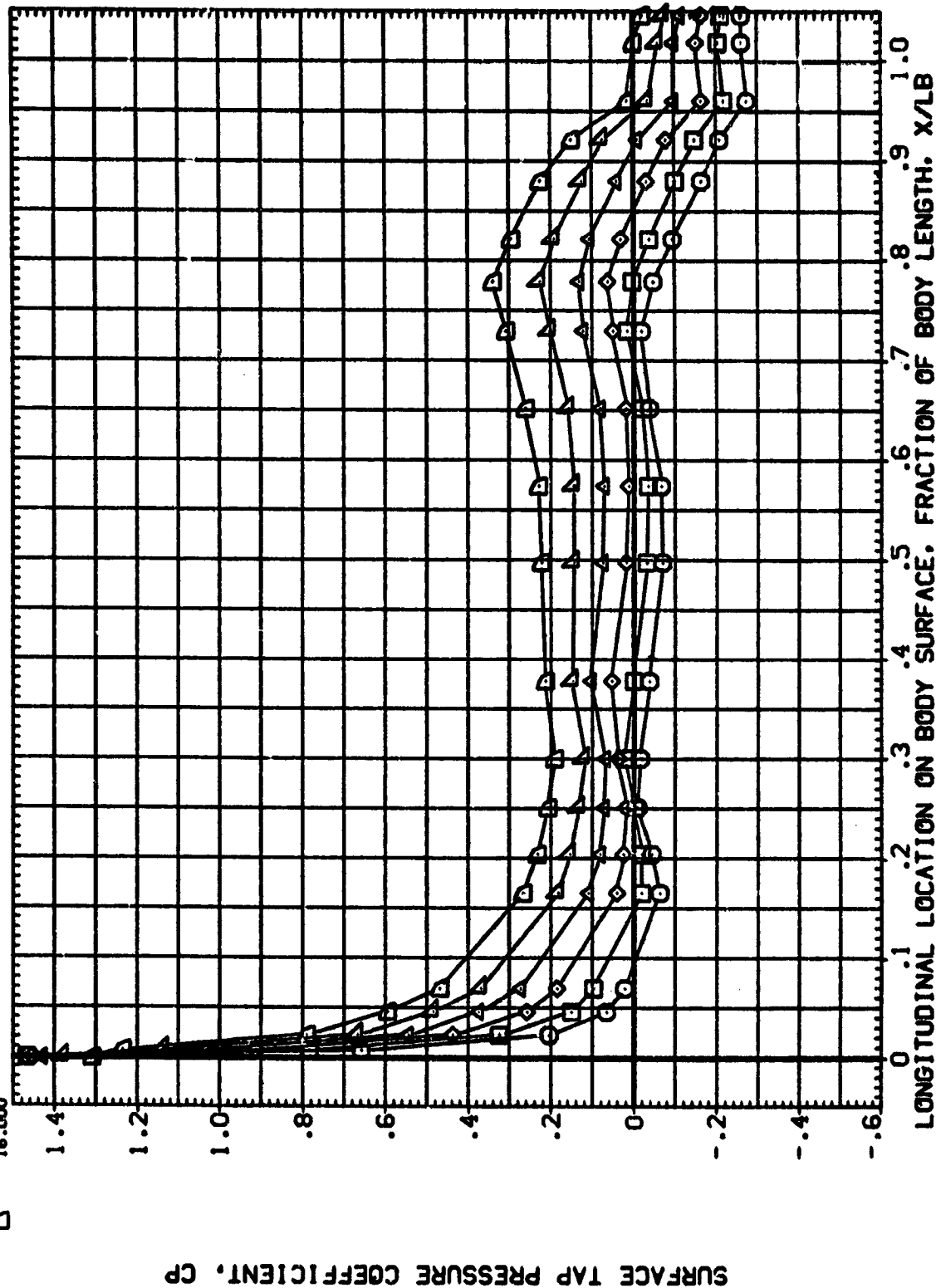
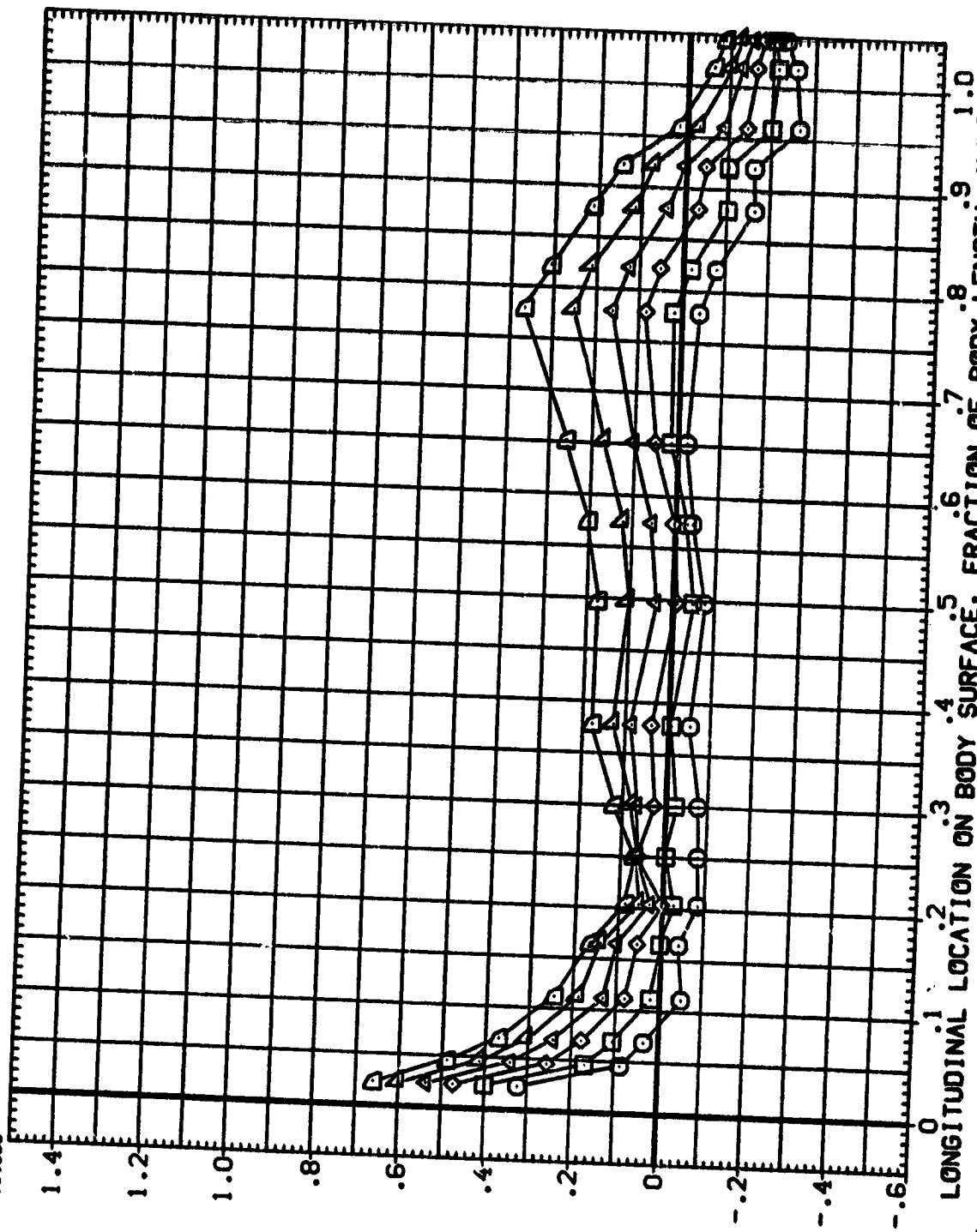


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL ALPHA PHI BETA
 □ -4.000
 ◇ 4.000
 △ 8.000
 ▽ 12.000
 ▽ 16.000

PARAMETRIC VALUES
 RUDDER .000 SPDRNK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES
 LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B13)

SYMBOL
 ▽ ▴ ◊ □

ALPHA -4.000
 .000
 4.000
 8.000
 12.000
 16.000

PHI 120.000

BETA 4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000

SPDRBK 35.000
 L-ELVN .000
 MACH 1.400

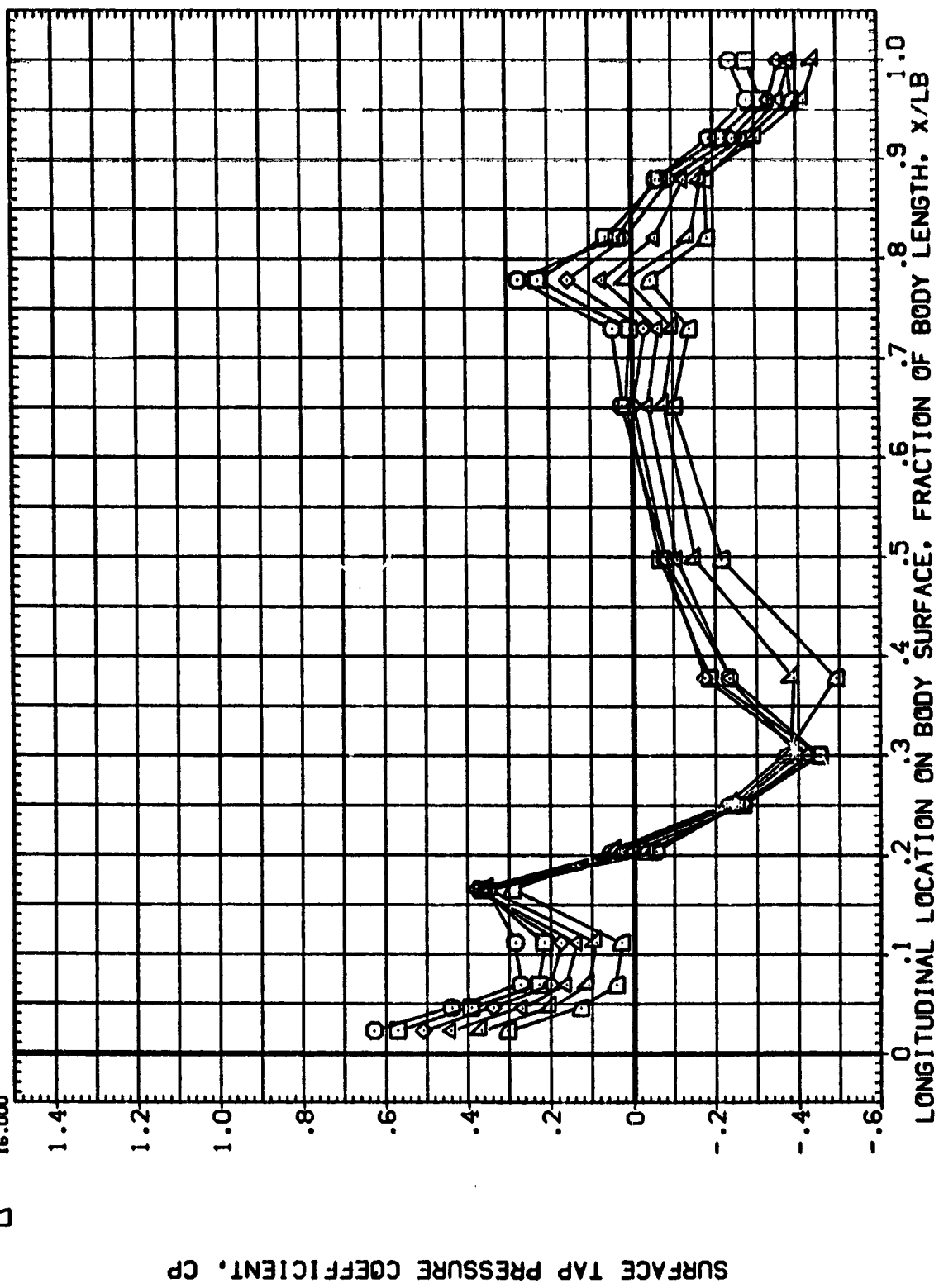


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B13)

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA PHI BETA
 -4.000 150.000 4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ○ □ ◇ △ ▽ ▿

SURFACE TAP PRESSURE COEFFICIENT, CP

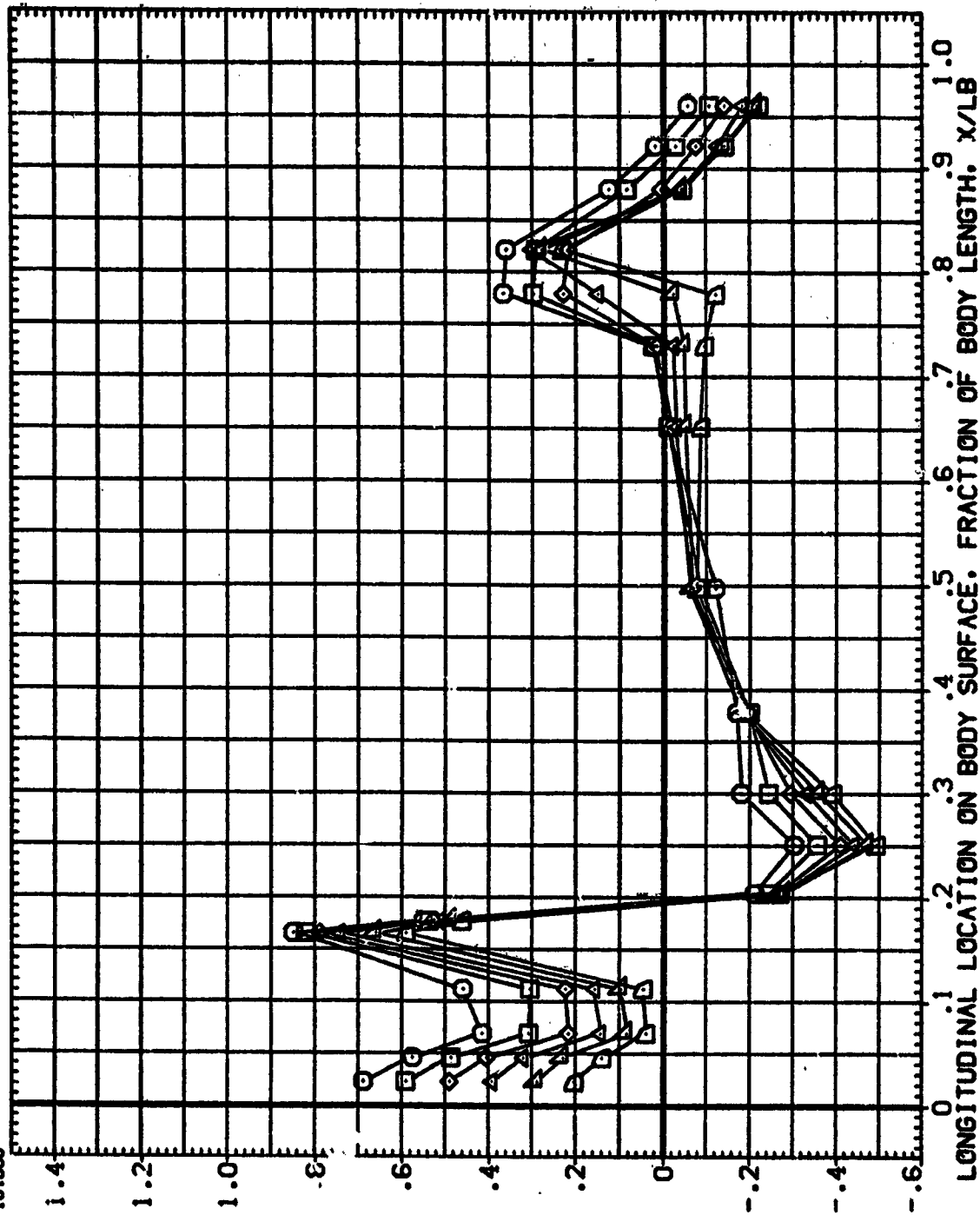


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRX	L-ELVN	MACH
□	-4.000	180.000	4.000	BOFLAP	.000	.000	.000
◇	4.000			R-ELVN	.000	.000	1.400
△	8.000						
▽	12.000						
◊	16.000						

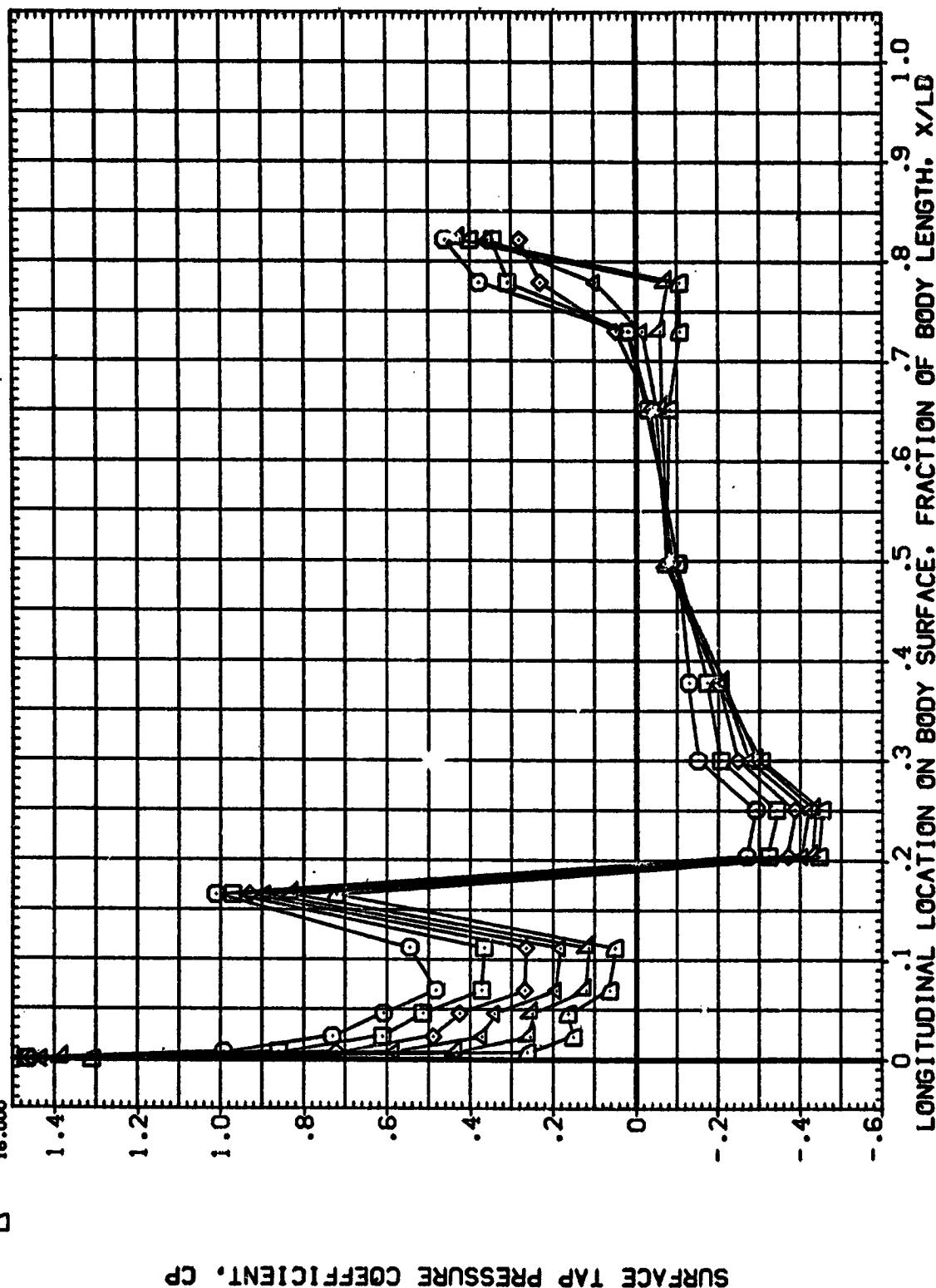


FIG. 7 ORBITER FUSELAGE BODY FLAP DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.000	-8.000	BDFLAP	.000
◇	.000	.000	.000	R-ELVN	.000
□	4.000	.000	.000		.000
△	8.000	.000	.000		.000
▽	12.000	.000	.000		.000

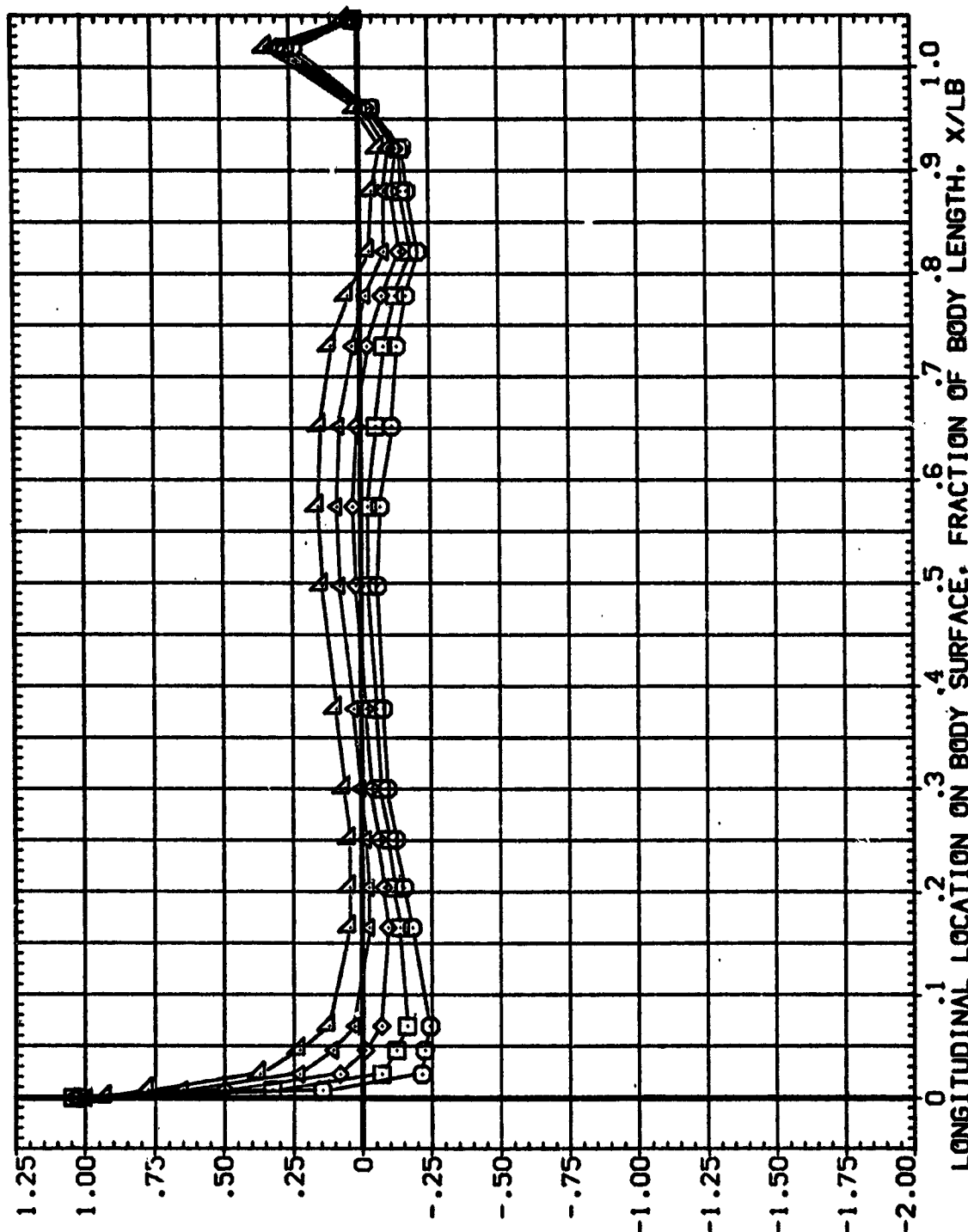


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA -4.000
 .000
 4.000
 8.000
 12.000

PHI 40.000

BETA -8.000

PARAMETRIC VALUES

RUDDER	SPDRK	55.000
80FLAP	.000	.000
R-ELVN	.000	.600

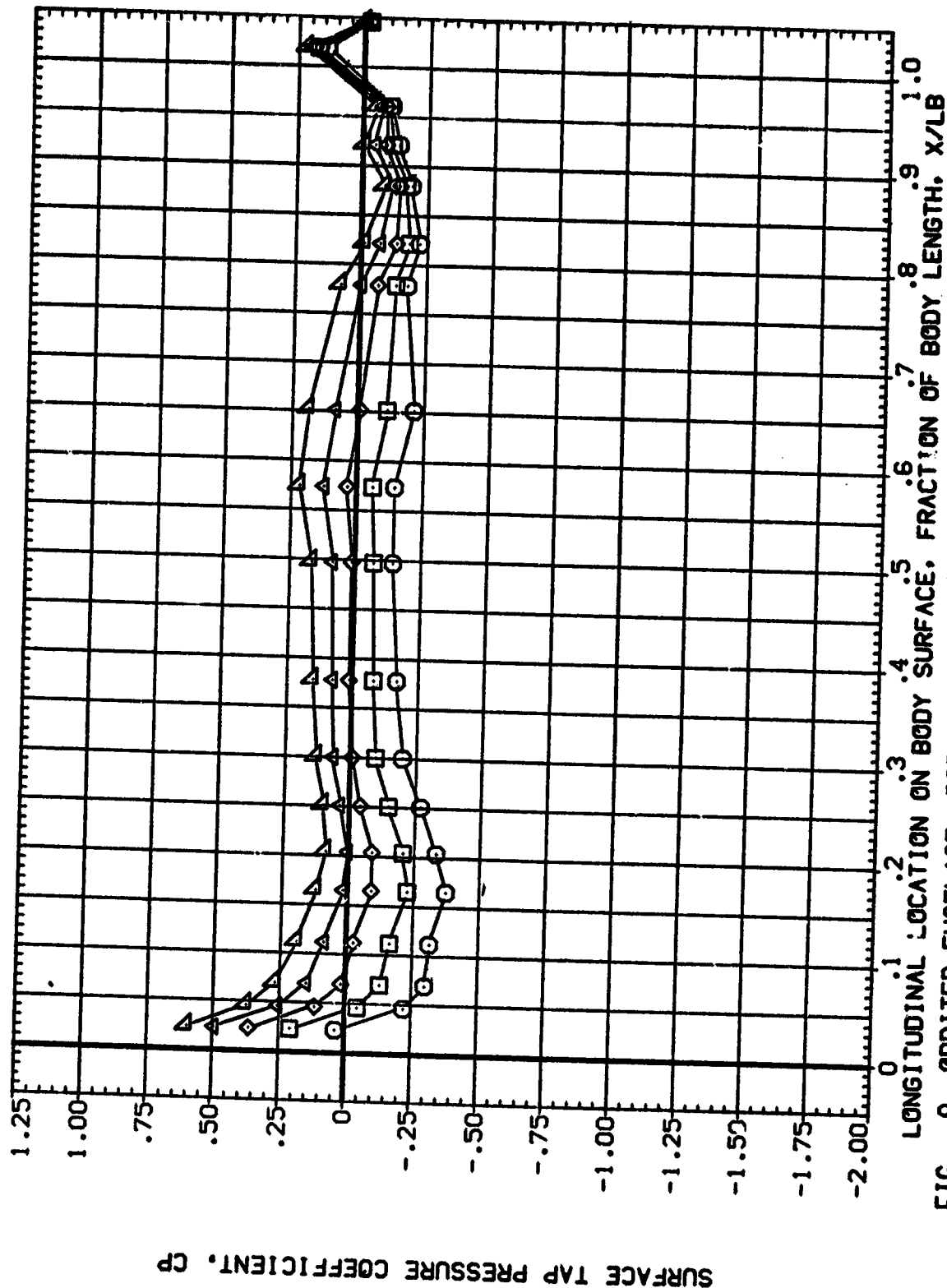


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8805)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
▽	-4.000	90.000	-8.000	RUDDER .000 SPOBRK 55.000
◇	.000			BOFLAP 16.300 L-ELVN .000
□	4.000			R-ELVN .000 MACH .600
△	8.000			
▽	12.000			

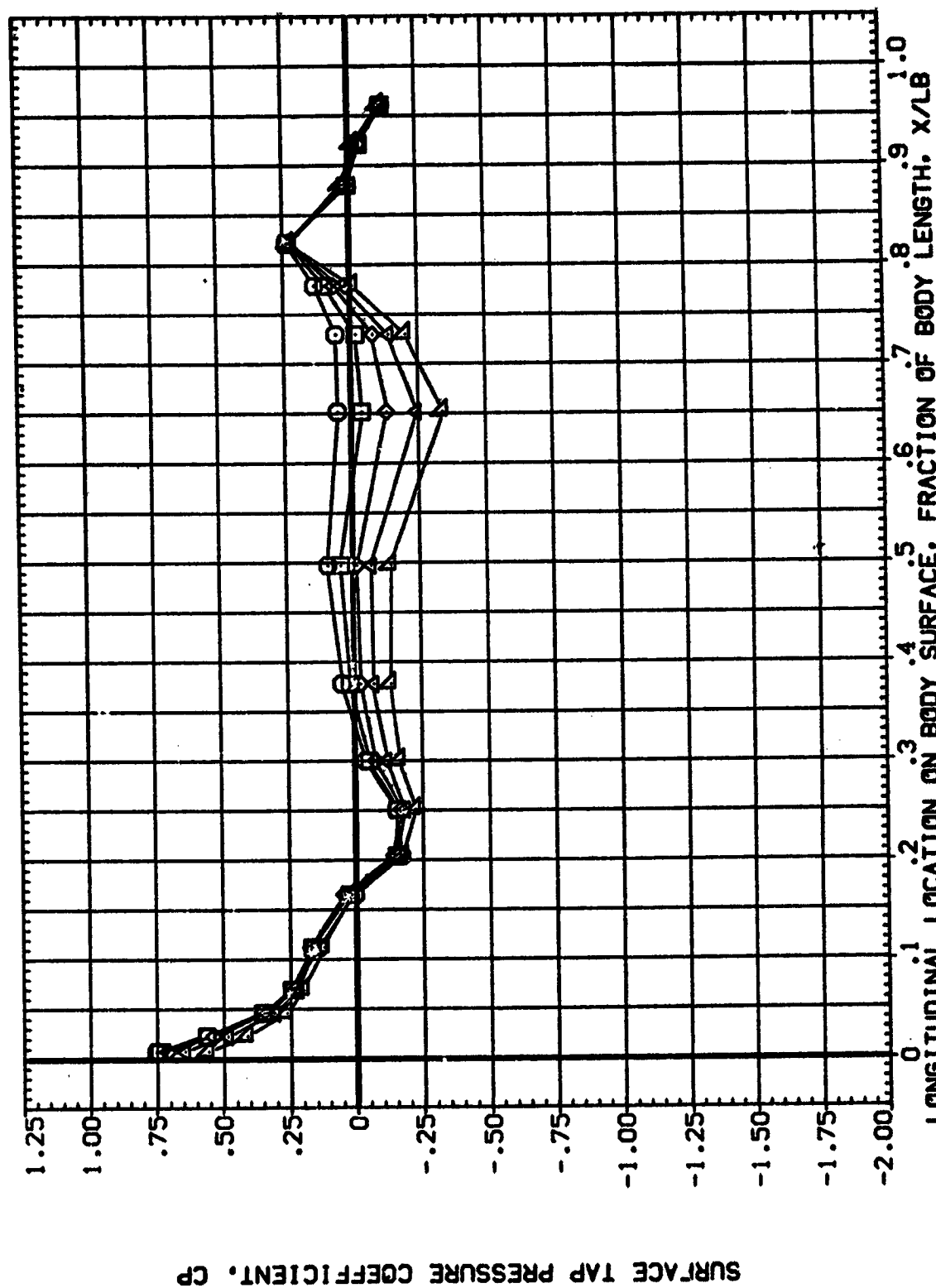


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 -8.000

PARAMETRIC VALUES

RUDDER	SPDRBK	55.000
BDFLAP	.000	.000
R-ELVN	16.300	.000
	.000	.600

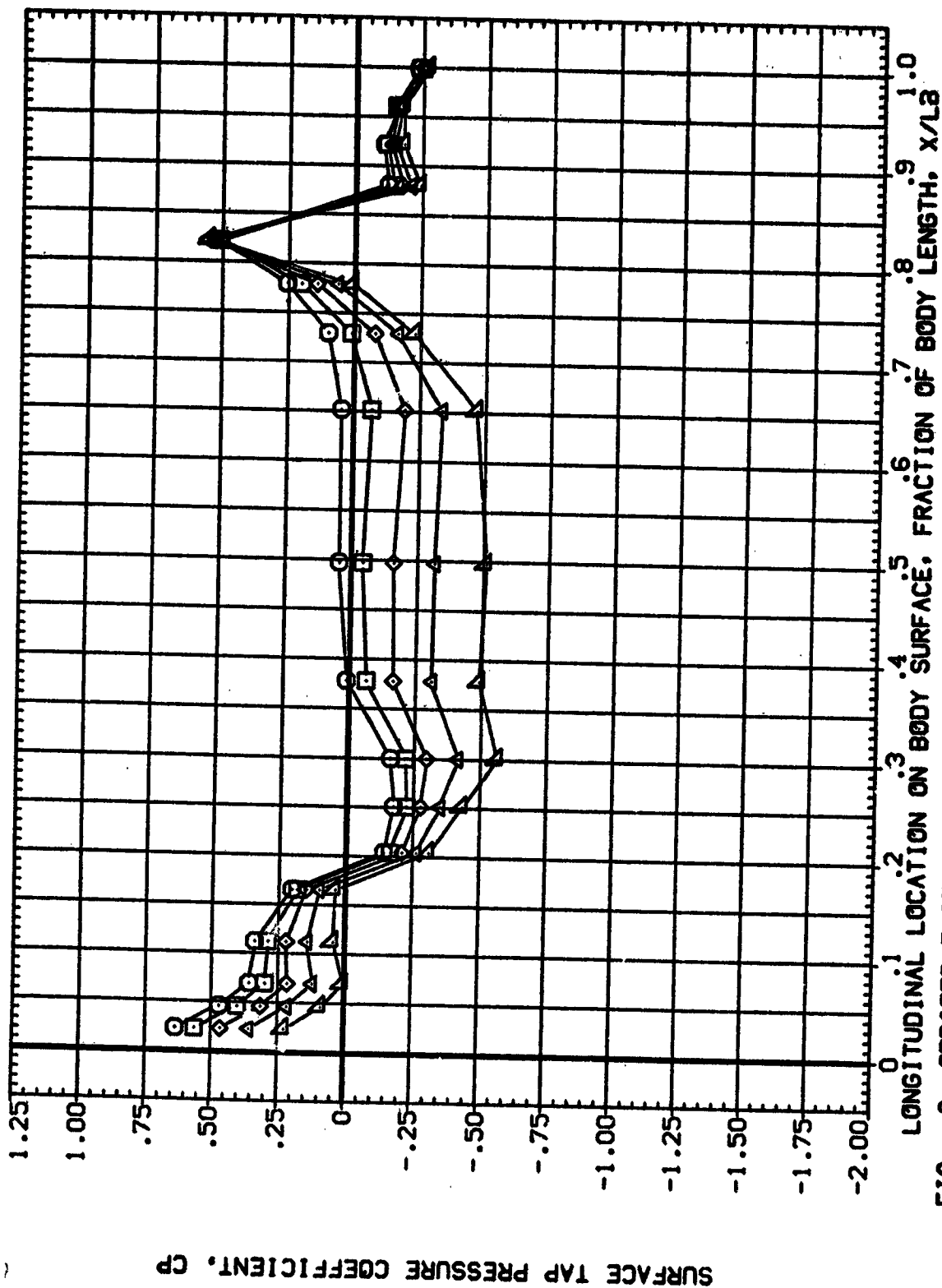


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL

ALPHA 150.000
-4.000
.000
4.000
8.000
12.000

PHI 150.000

BETA -8.000

PARAMETRIC VALUES
RUDDER .000 SPDRK .000
BODYFLAP 16.300 L-ELVN .000
R-ELVN .000 NACH .600

55.000
.000
.600

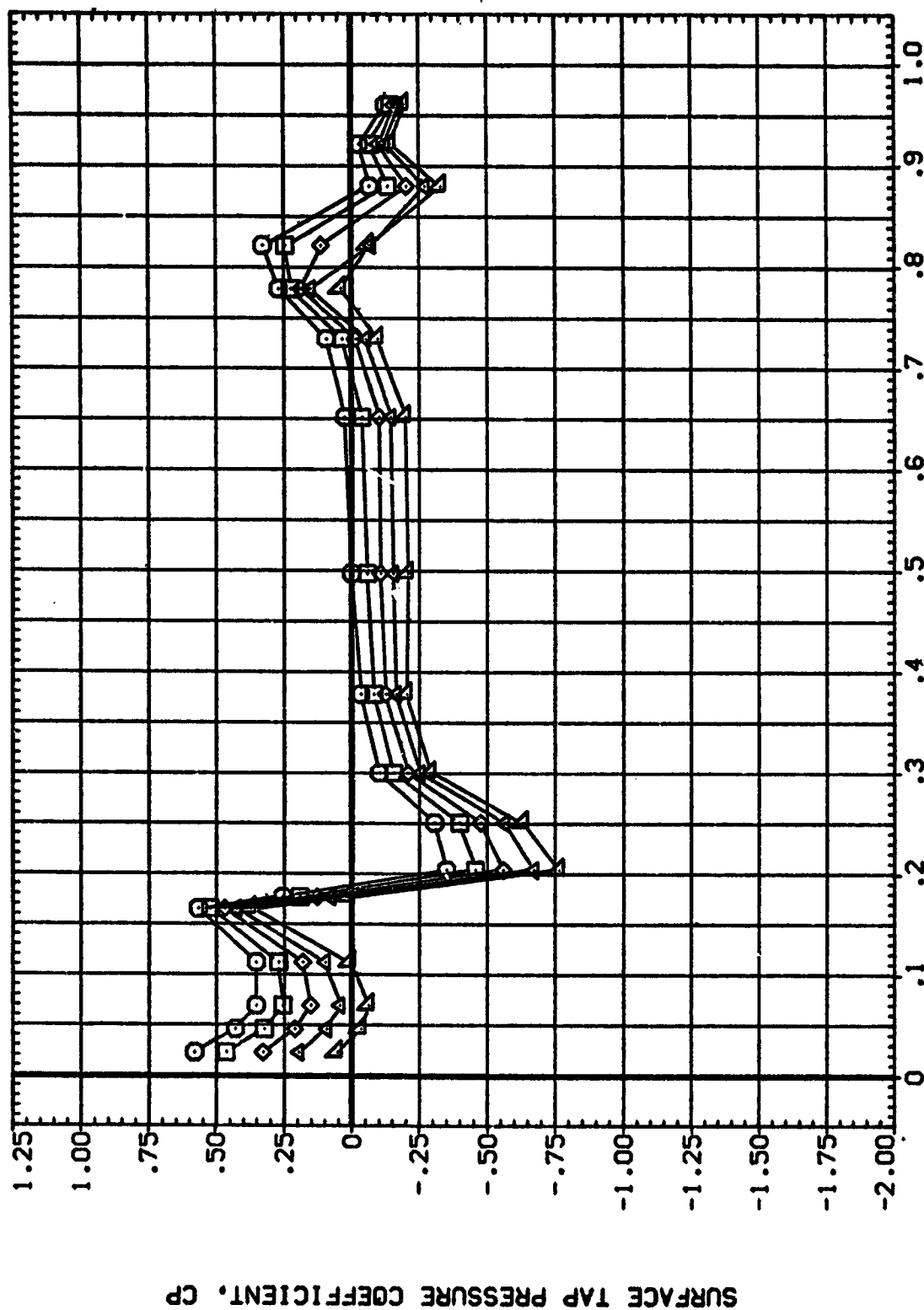


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000
 -8.000

BETA
 -8.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

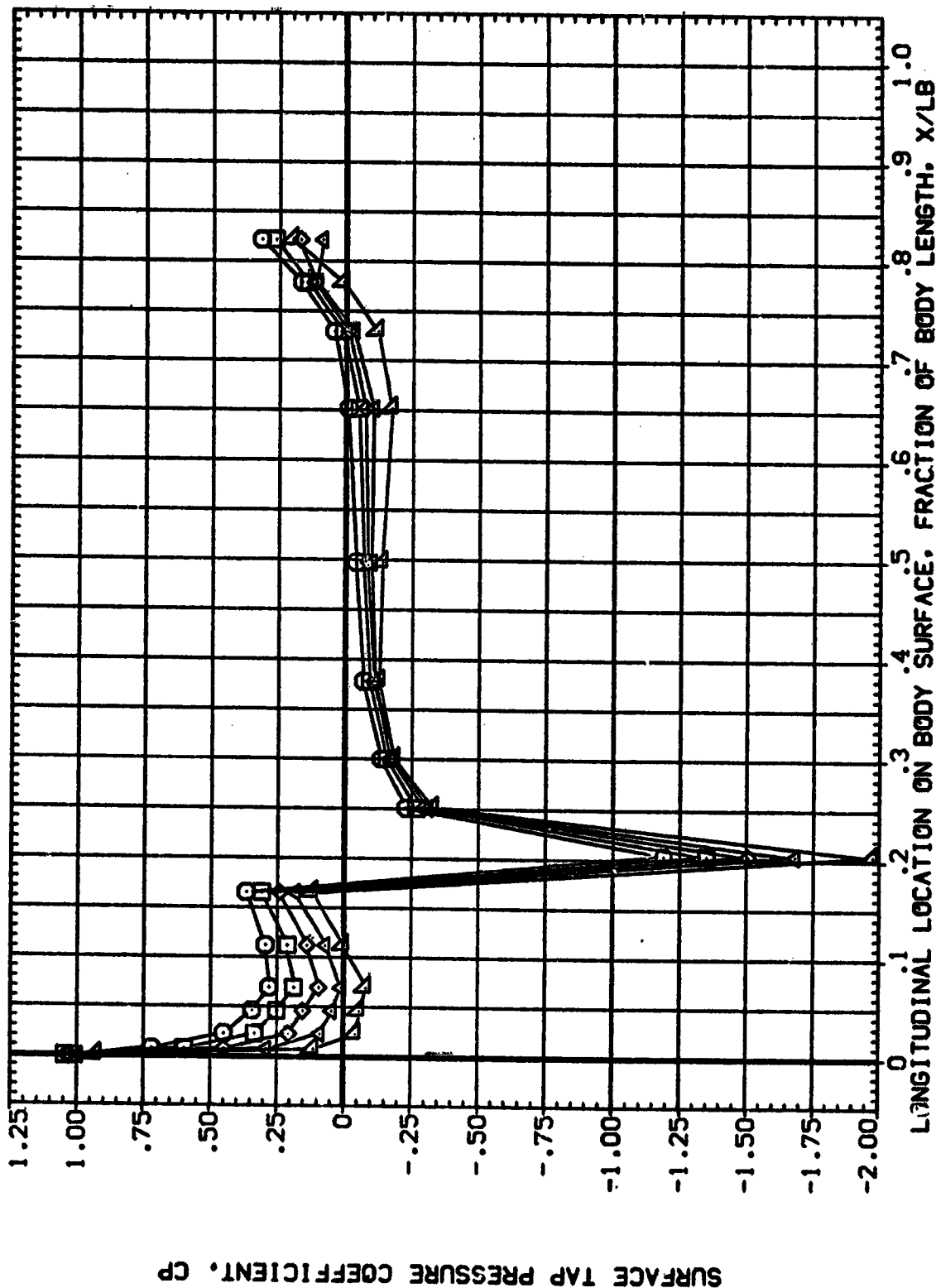


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 .000

BETA
 -4.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

SPDRK
 L-ELVN
 MACH
 55.000
 .000
 .600

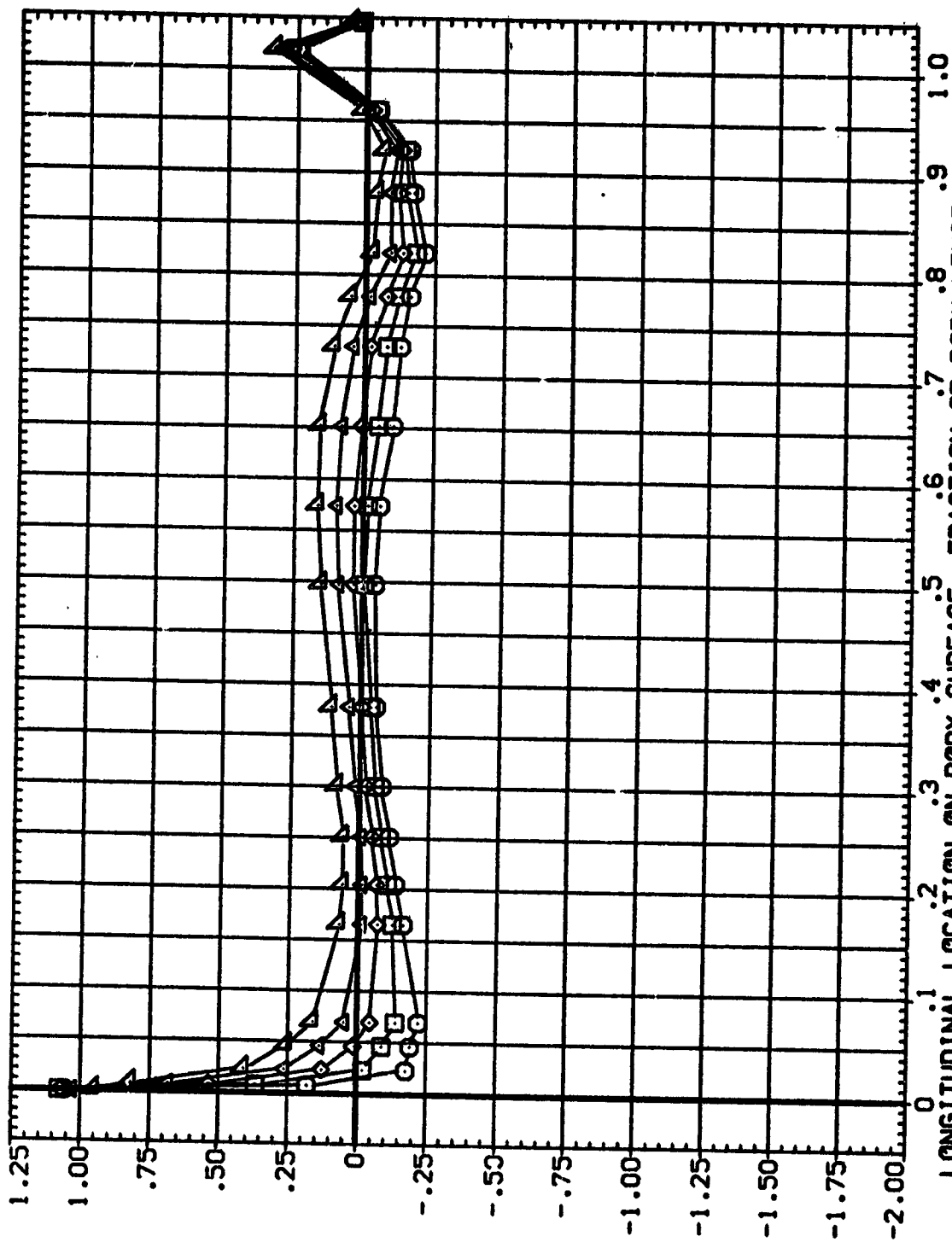


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

ANES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 -4.000

PARAMETRIC VALUES
 .000 SPDRK
 16.3 L-ELVN
 CH
 .000
 .000
 .000

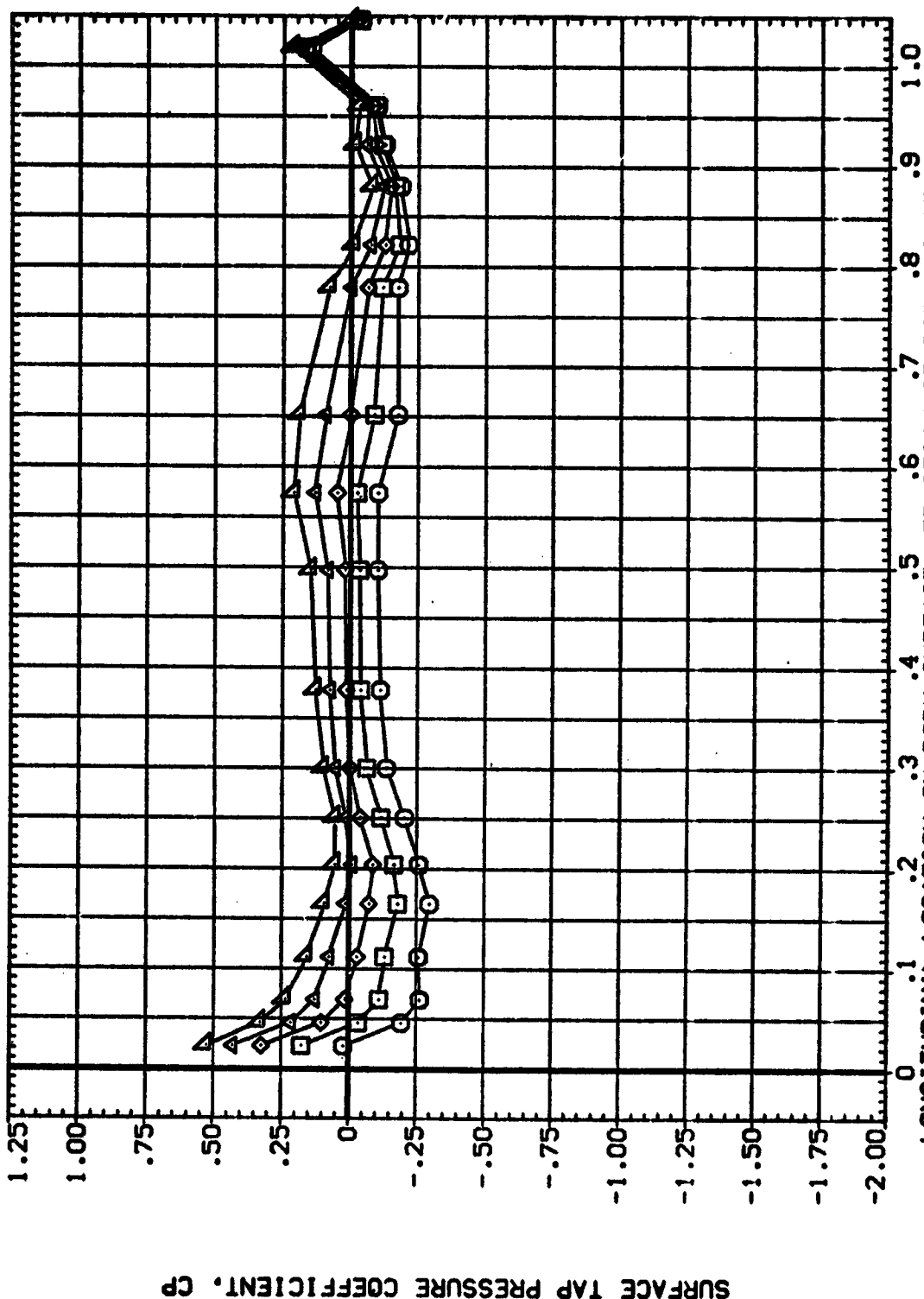


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8805)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRK	L-ELVN	NACH
▽	-4.000	90.000	-4.000					.000		55.000
◇	.000							.000		.000
□	4.000							16.300		.000
△	8.000							.000		.600
▽	12.000									

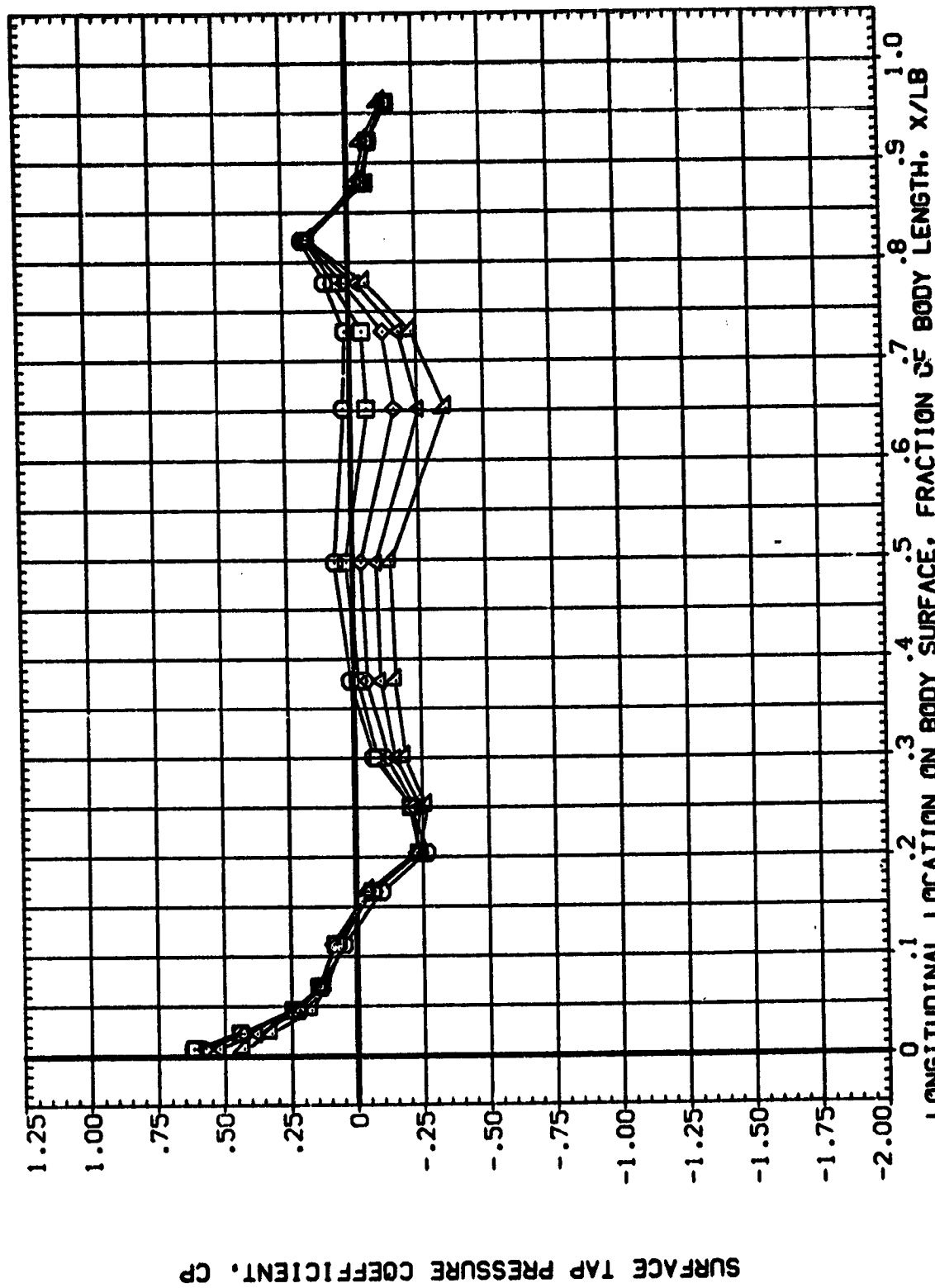


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 -4.000

RUDDER
 80FLAP
 R-ELYN

PARAMETRIC VALUES
 .000 SP08WK
 16.300 L-ELYN
 .000 MACH

95.000
 .000
 .600

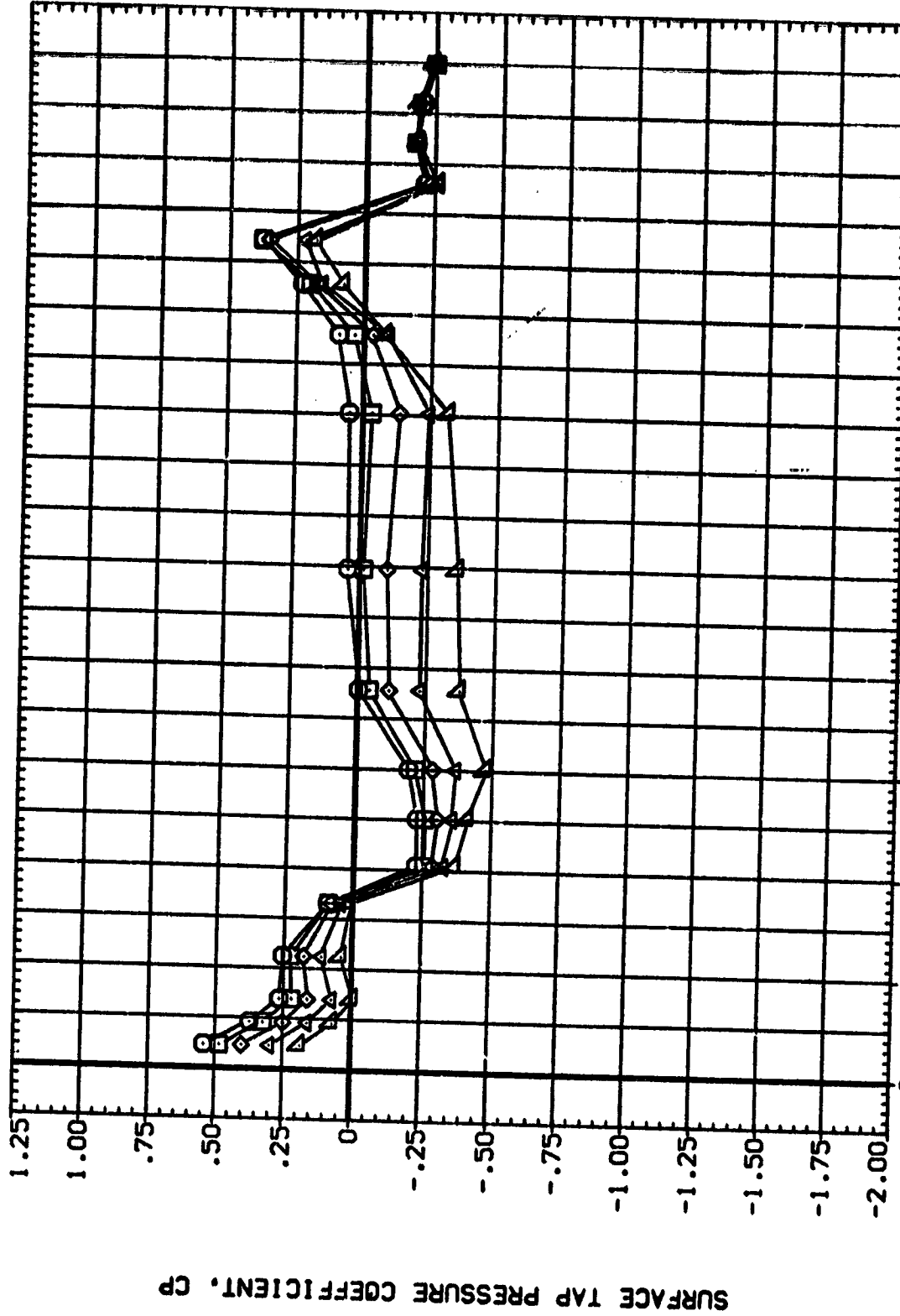


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRK	L-ELVN	MACH
○	-4.000	150.000	-4.000				.000	.000	.000	.500
□	.000						.000	.000	.000	.500
◇	4.000						.000	.000	.000	.500
△	8.000						.000	.000	.000	.500
▽	12.000						.000	.000	.000	.500

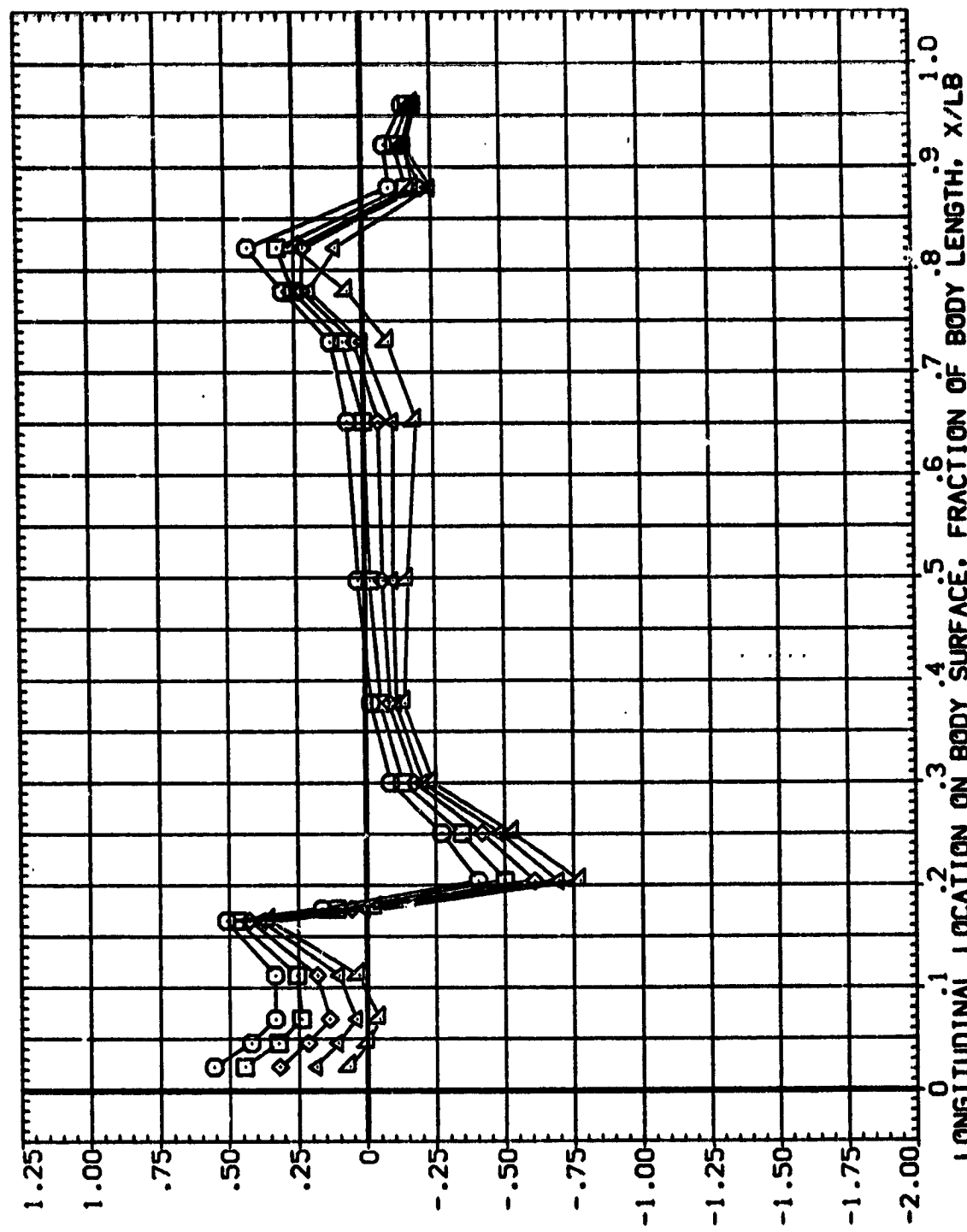


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▴
 ▾
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	SPDRN	55.000
BOFLAP	16.300	.000
R-ELVN	.000	.500

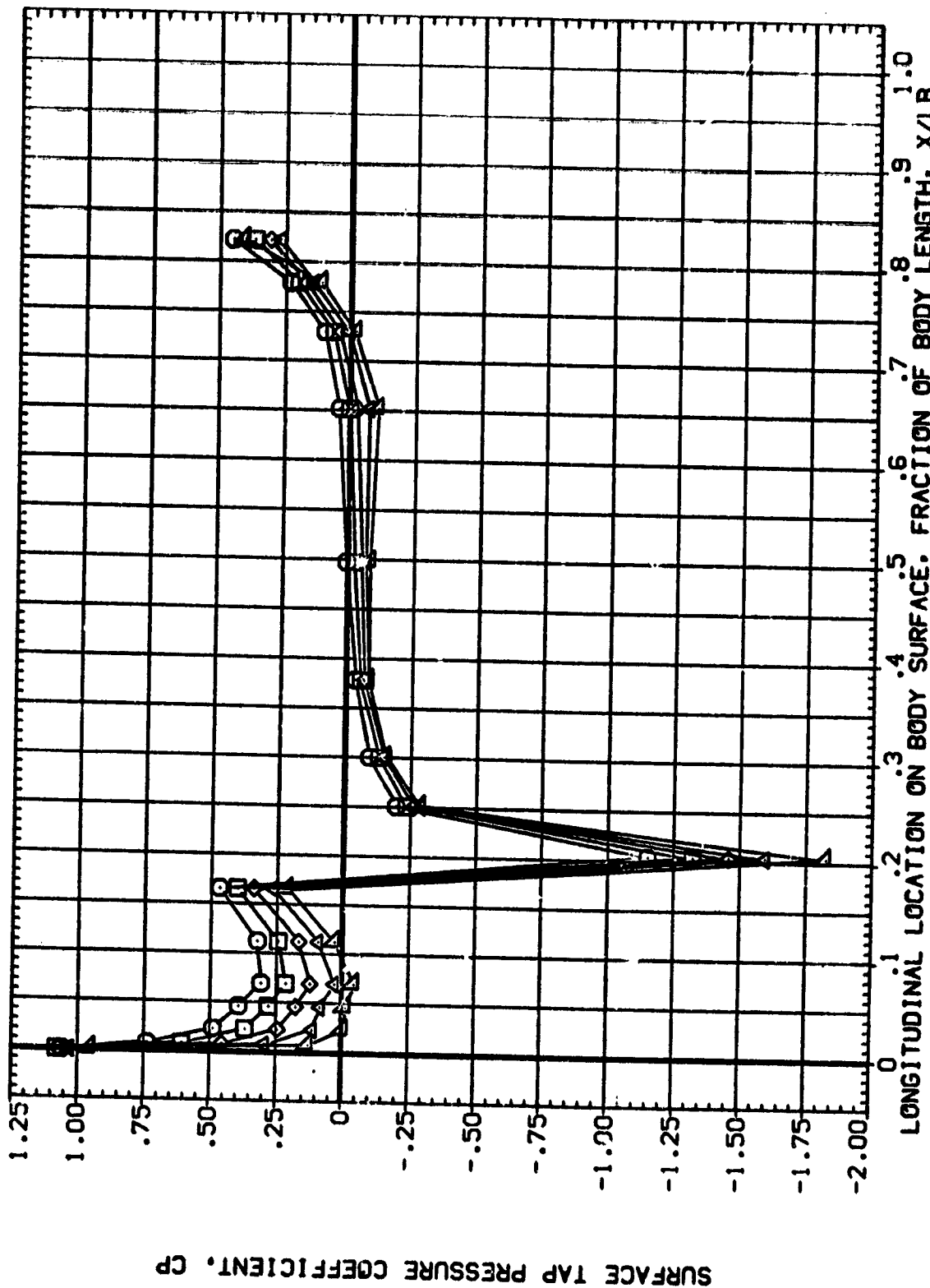


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.000	.000	80FLAP	.000 SPDRK
□	.000	.000	.000	R-ELVN	16.300 L-ELVN
◇	4.000	.000	.000		.000 MACH
△	8.000	.000	.000		.600
▽	12.000	.000	.000		

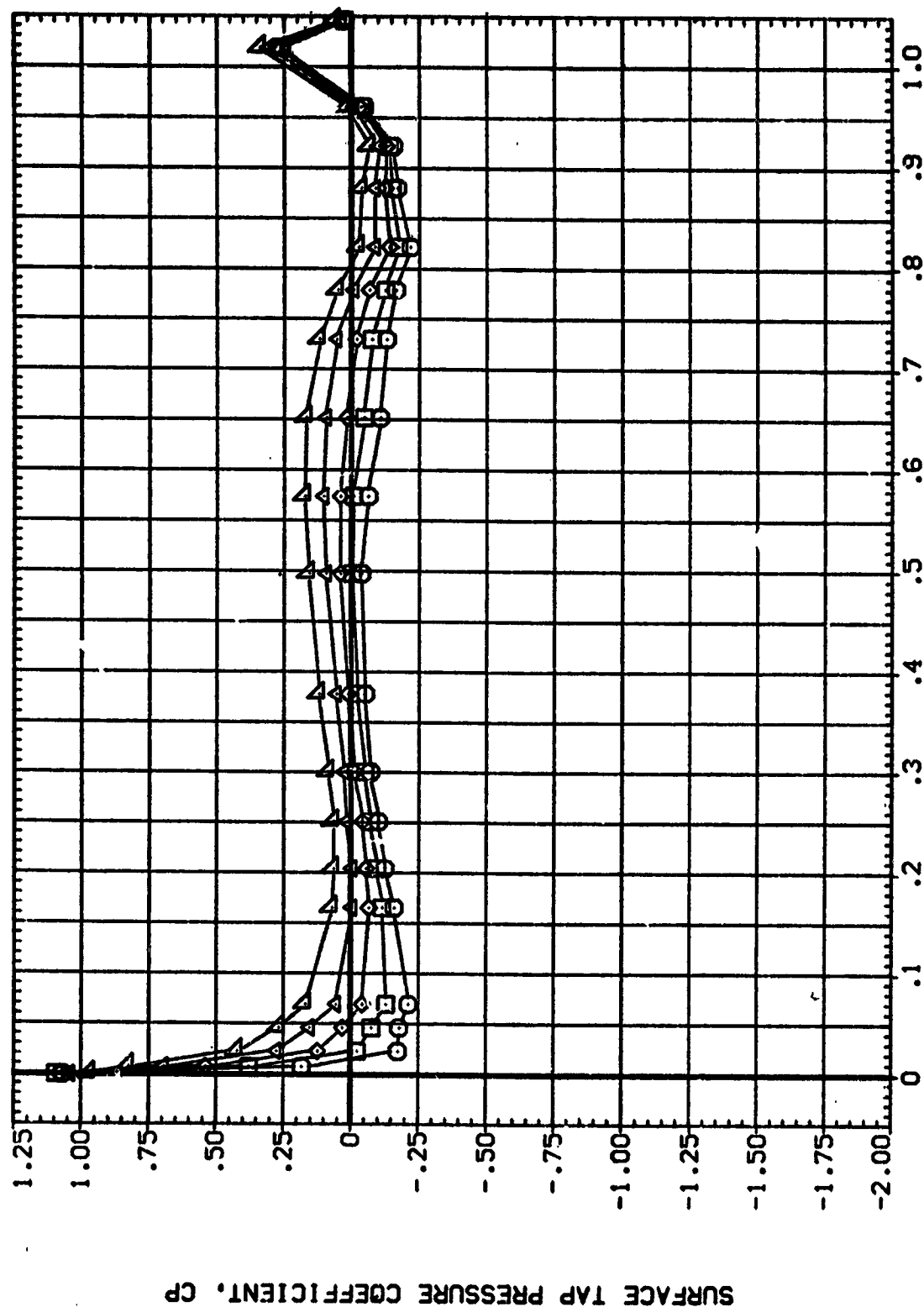


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL

ALPHA

PHI

BETA

RUDDER

80FLAP

R-ELVN

SPDRK

L-ELVN

MACH

55.000

.000

.000

.600

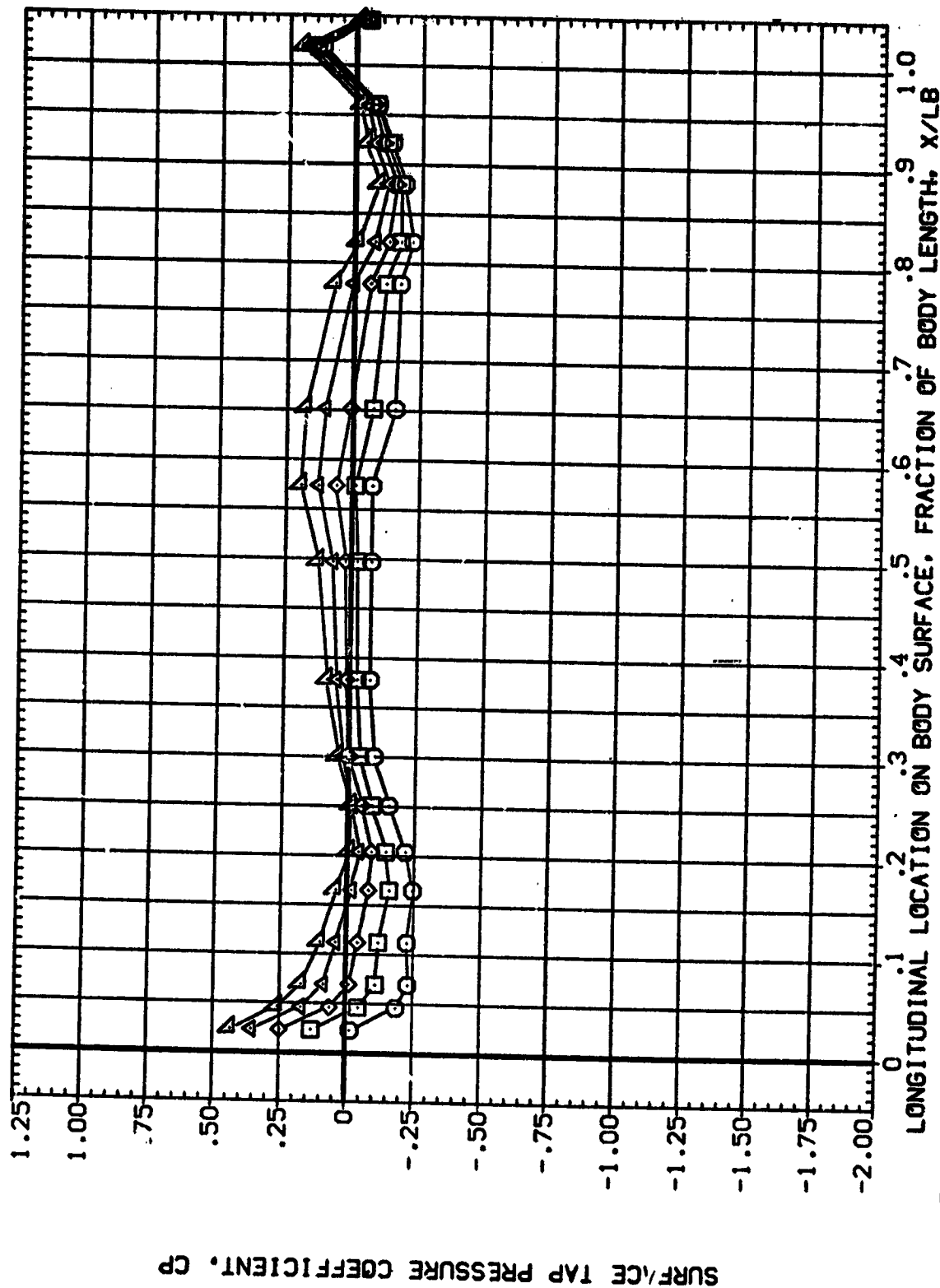


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B05)

SYMBOL	ALPHA		PHI		BETA		PARAMETRIC VALUES			
	-4.000	.000	90.000	.000			RUDDER	.000	SPOBRK	55.000
▽	4.000						BDFLAP	16.300	L-ELVN	.000
◇	8.000						R-ELVN	.000	MACH	.600
□	12.000									

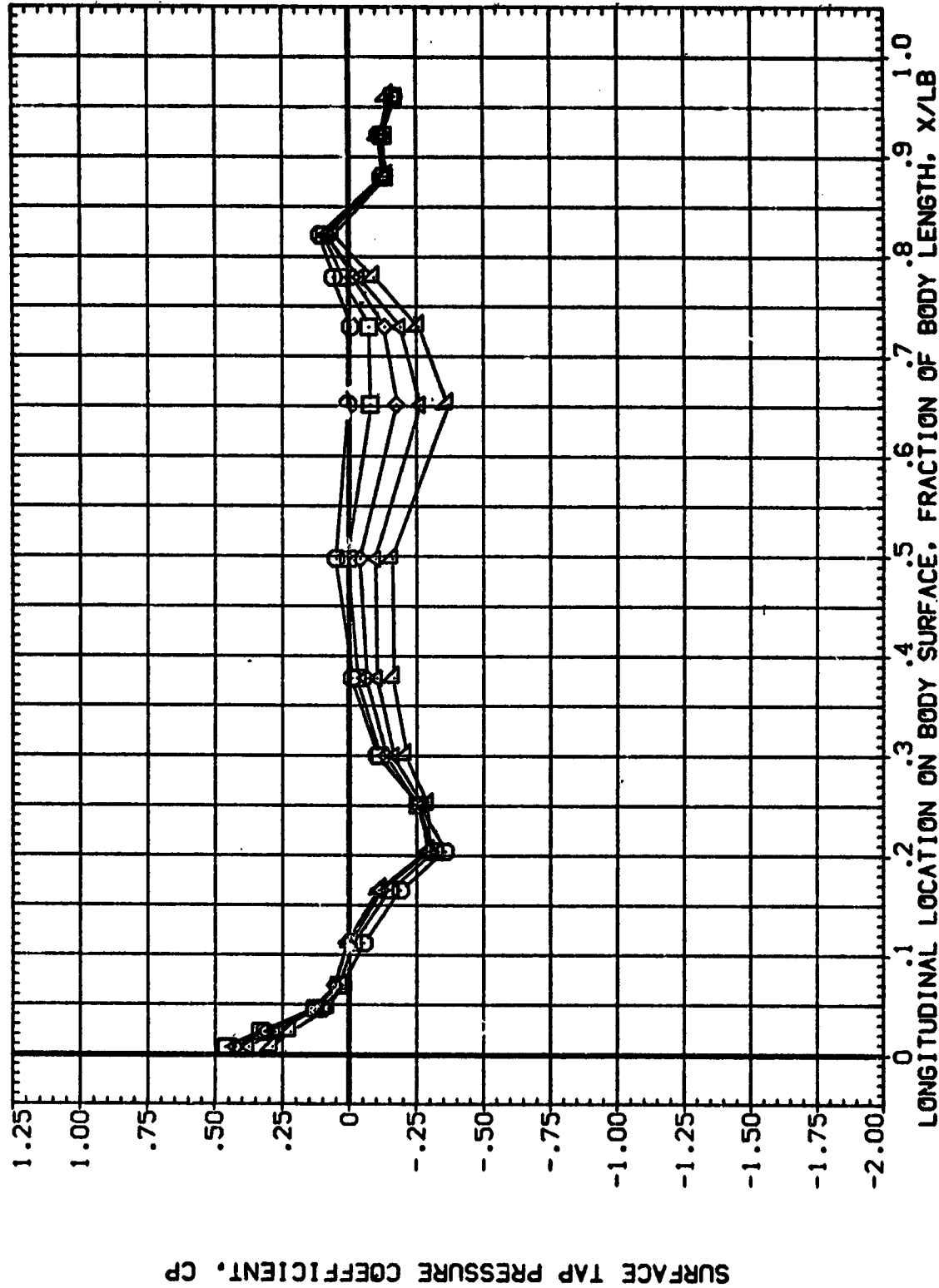


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPORRK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

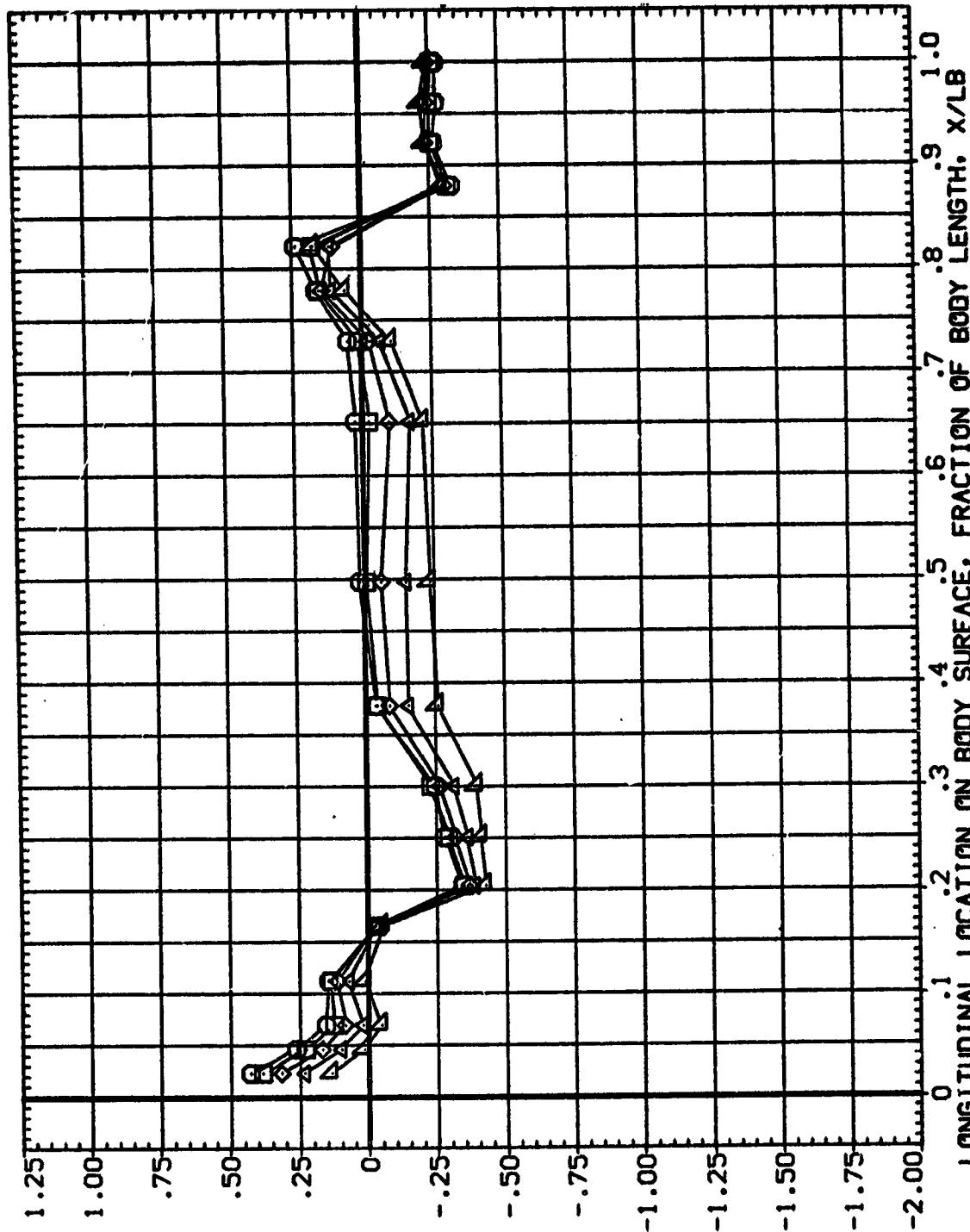


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B05)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRK	L-ELVN	MACH
○	-4.000	150.000	.000	BOFLAP	.000	16.300	.000
□	.000			R-ELVN	.000		.000
◇	4.000						.300
△	8.000						.600
▽	12.000						

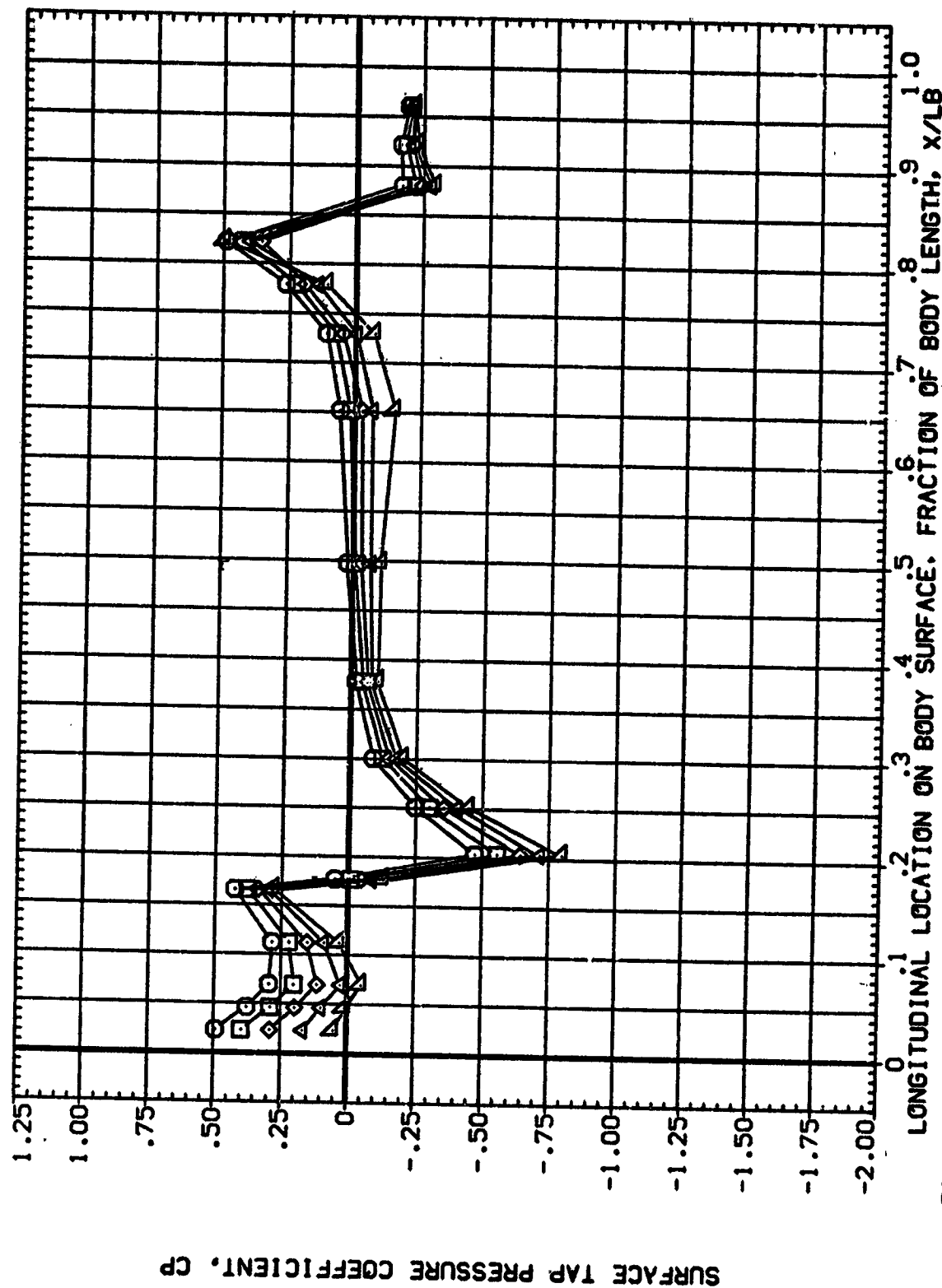


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (IE8B05)

SYMBOL
 ∇ \diamond \square \triangle

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000

BETA
 .000

PARAMETRIC VALUES

RUDDER
 80FLAP
 R-ELVN

.000
 16.300
 .000

SPDRBK
 L-ELVN
 MACH
 .000
 .000
 .600

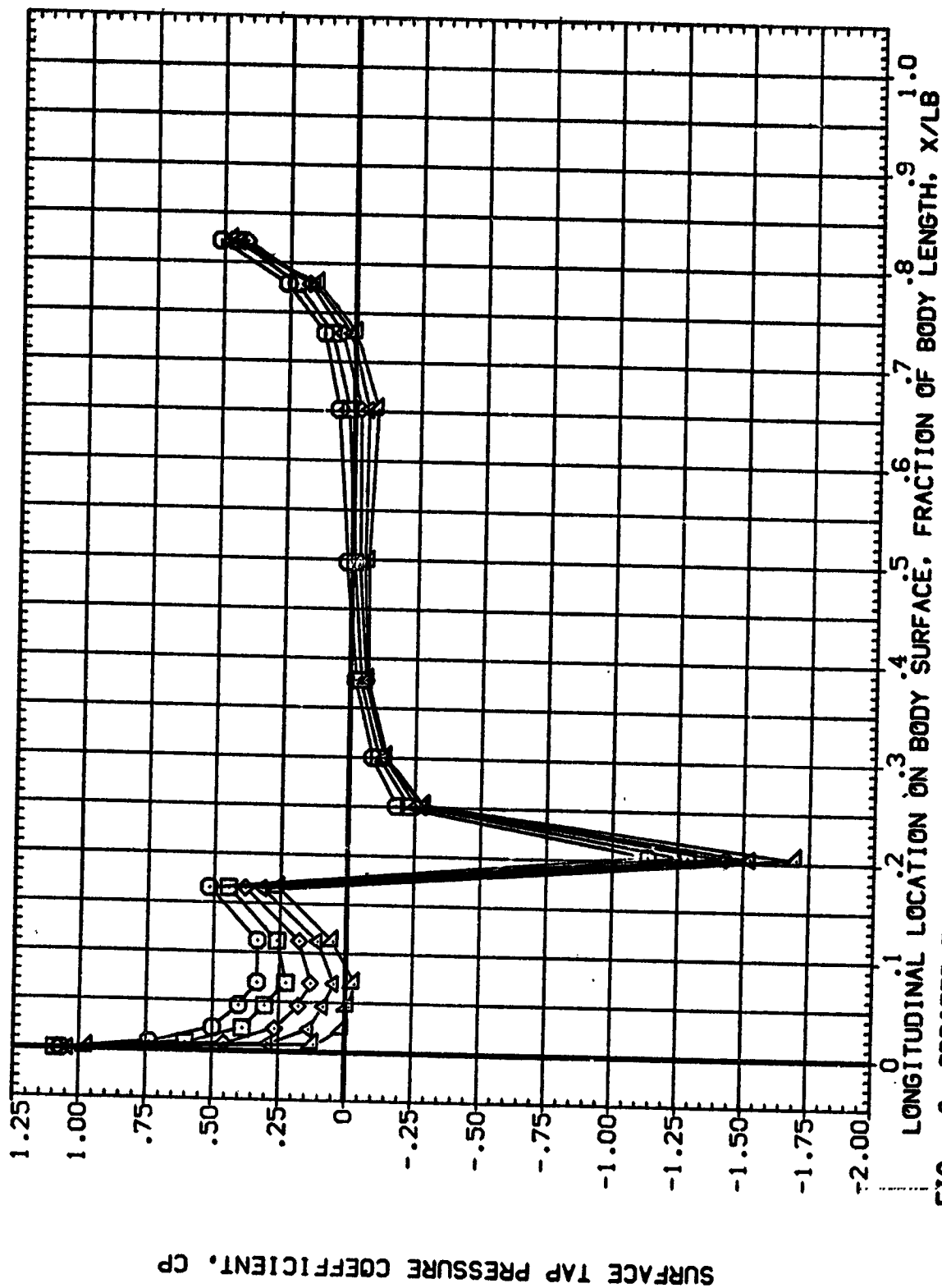


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B05)

SYMBOL
□ ◇ △ ▽

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI .000

BETA 4.000

PARAMETRIC VALUES
RUDDER .000 SPDRK 55.000
BDFLAP 16.300 L-ELVN .000
R-ELVN .000 NACH .600

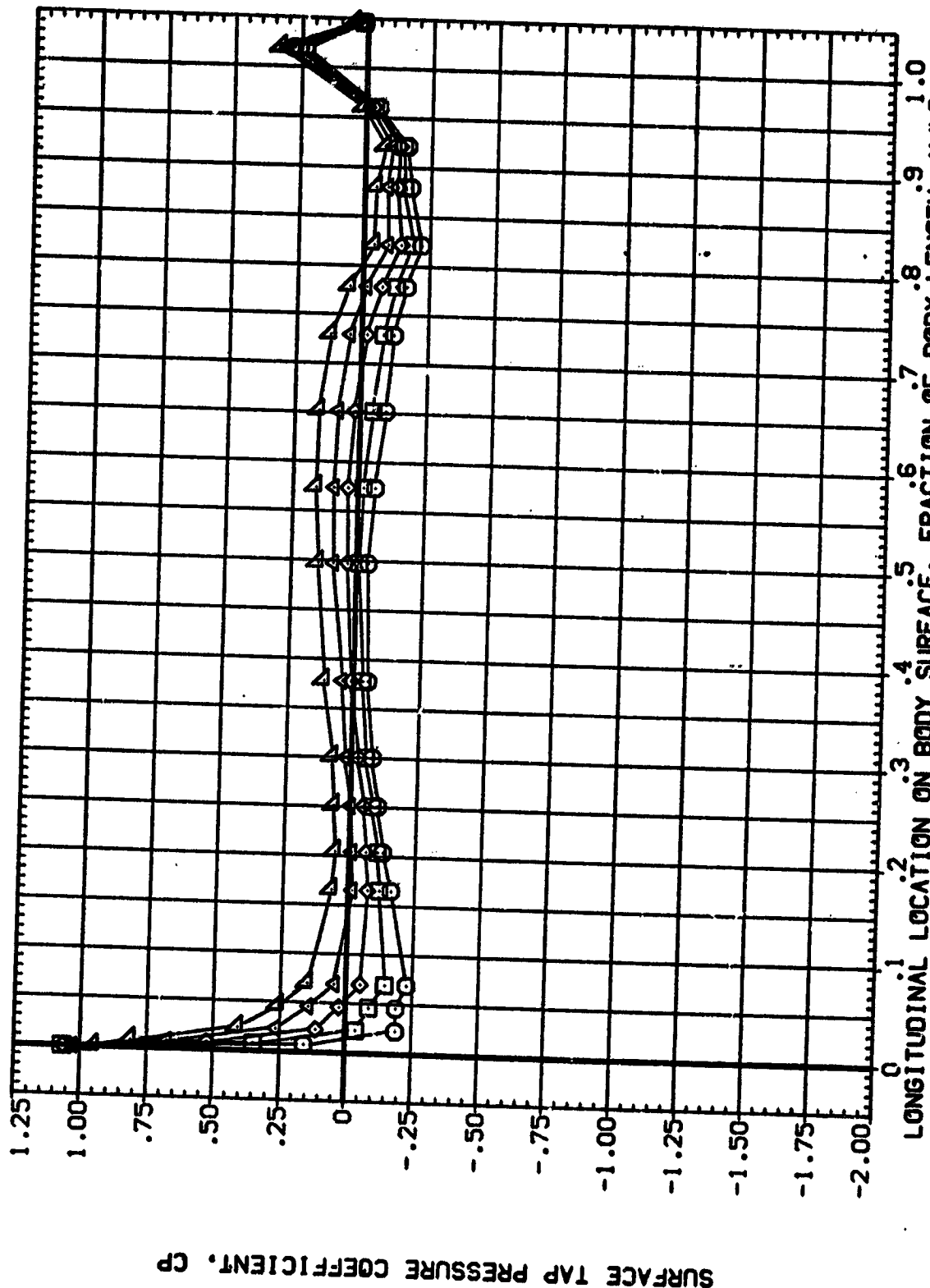


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPOROK .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

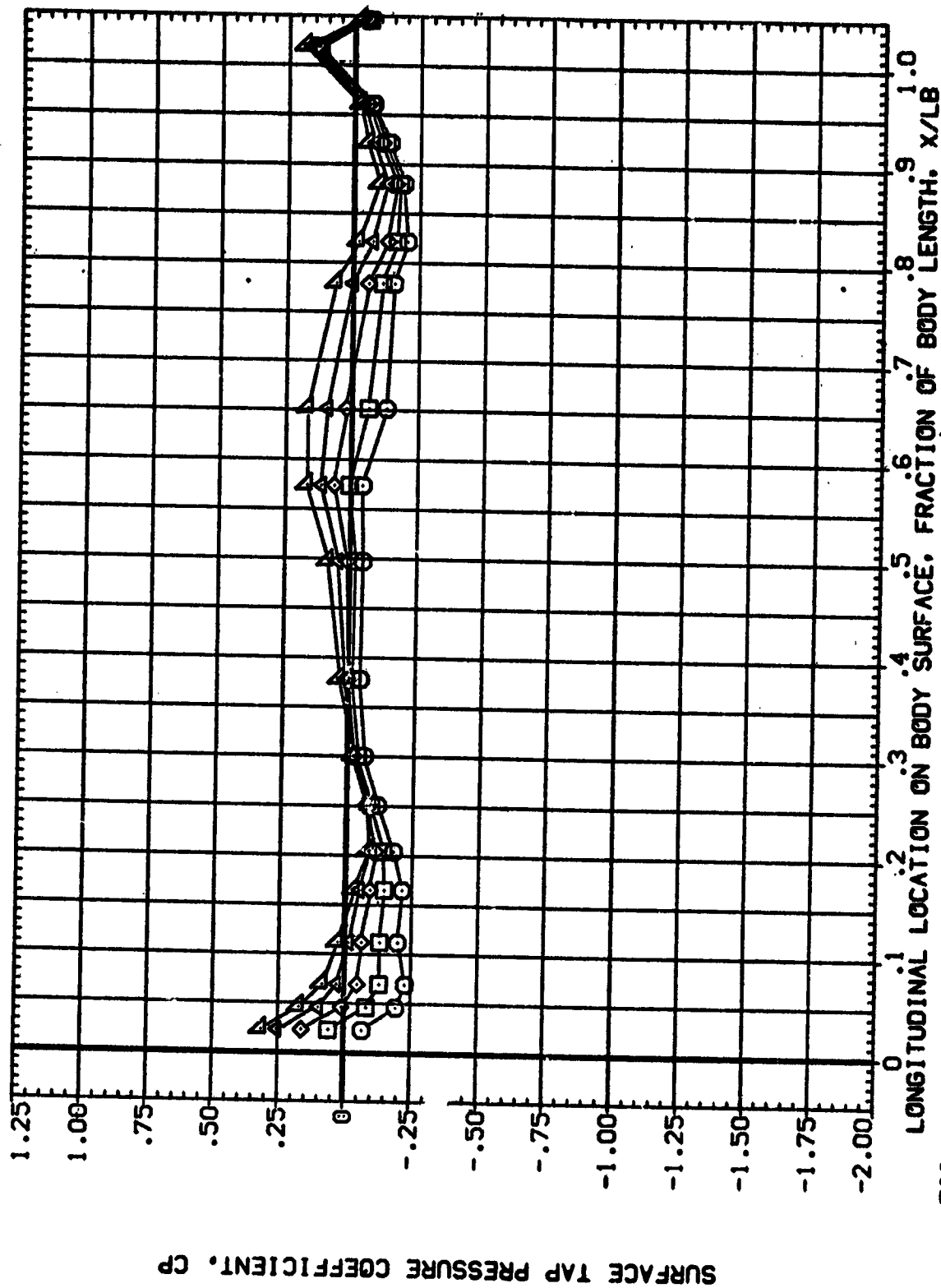


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL
 ▽
 ◇
 □
 ▲

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 90.000

BETA
 4.000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPOBRK
 16.300 L-ELVN
 .000 MACH
 55.000
 .000
 .600

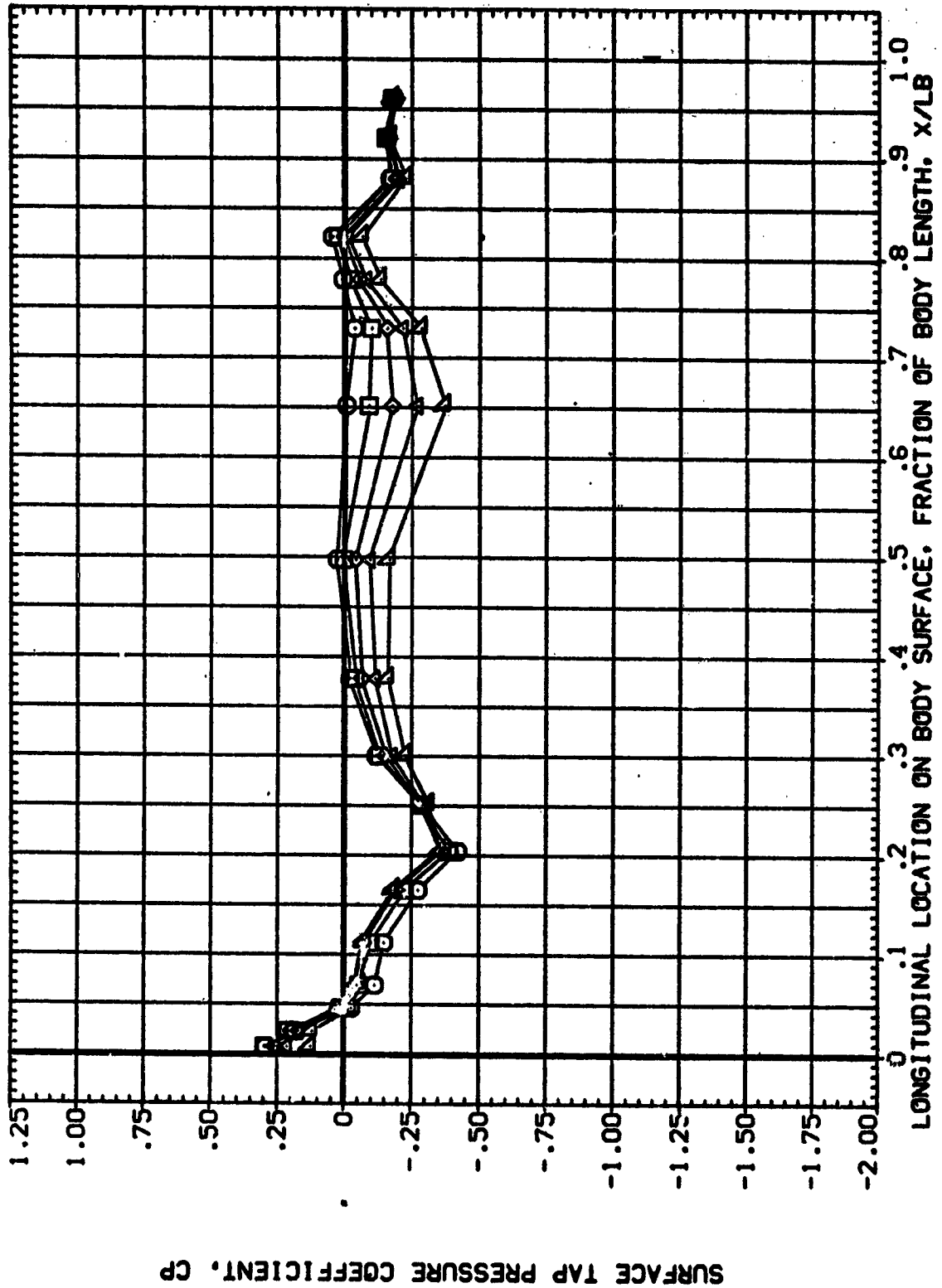


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8805)

SYMBOL
 ▽
 ◊
 □
 ▴

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELWN

.000
 16.300
 .000

SPOBRK
 L-ELWN
 MACH

55.000
 .000
 .600

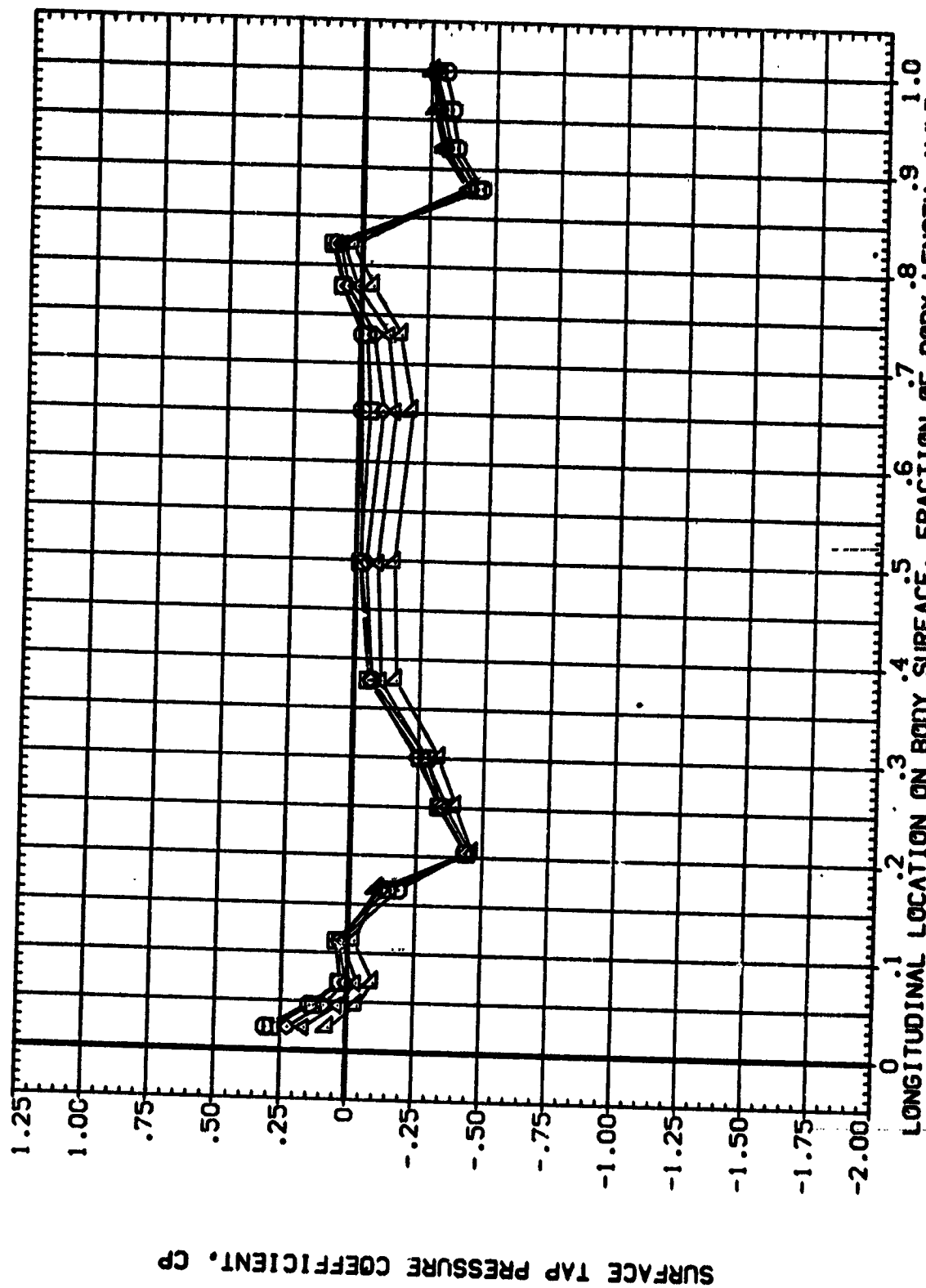


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL
 ▽
 ◇
 △
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 150.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

.000
 16.300
 .000

SPUBRK
 L-ELVN
 MACH

55.000
 .000
 .600

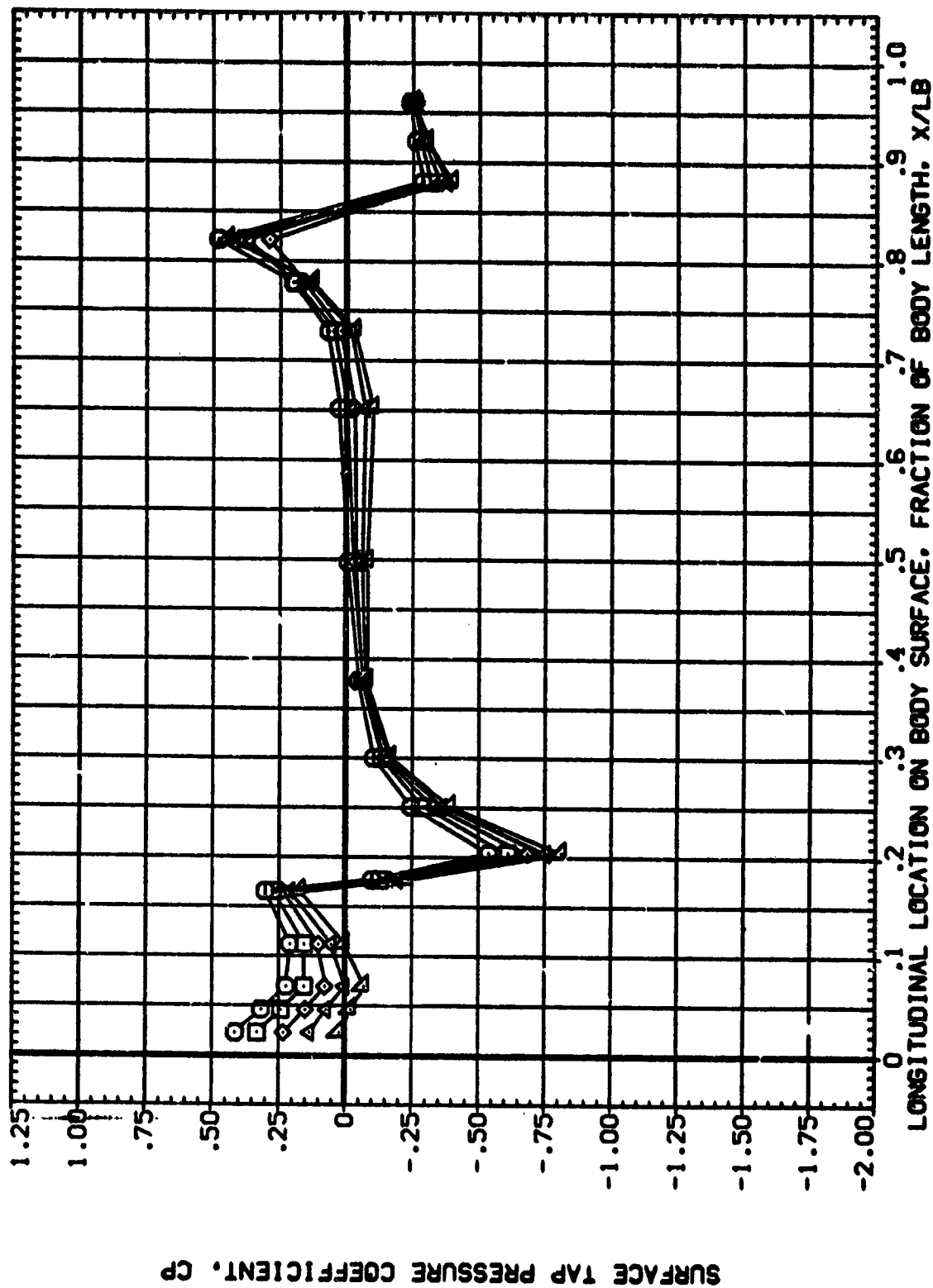


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP 16.300
 R-ELVN .000

SP088X 55.000
 L-ELVN .000
 MACH .500

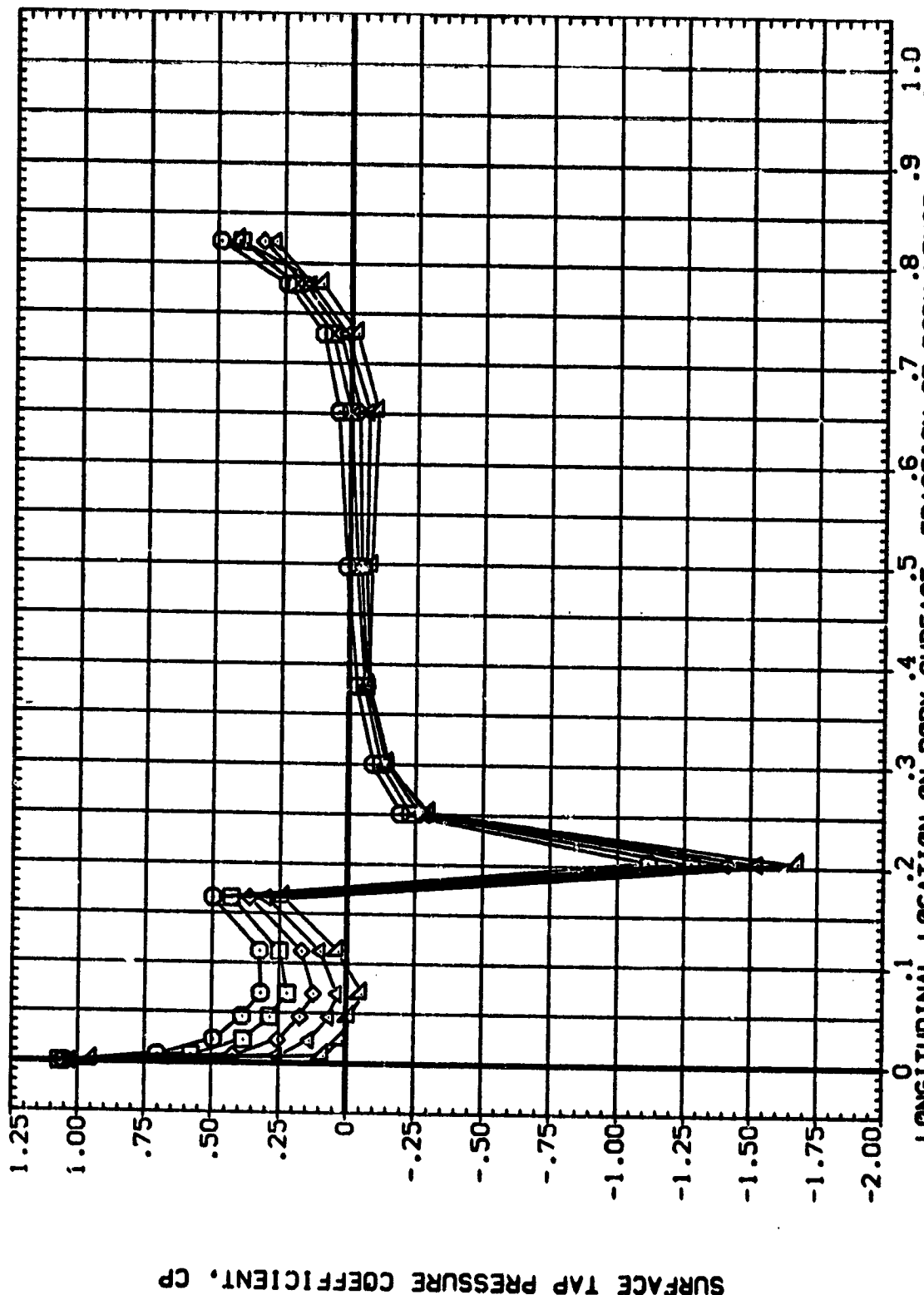
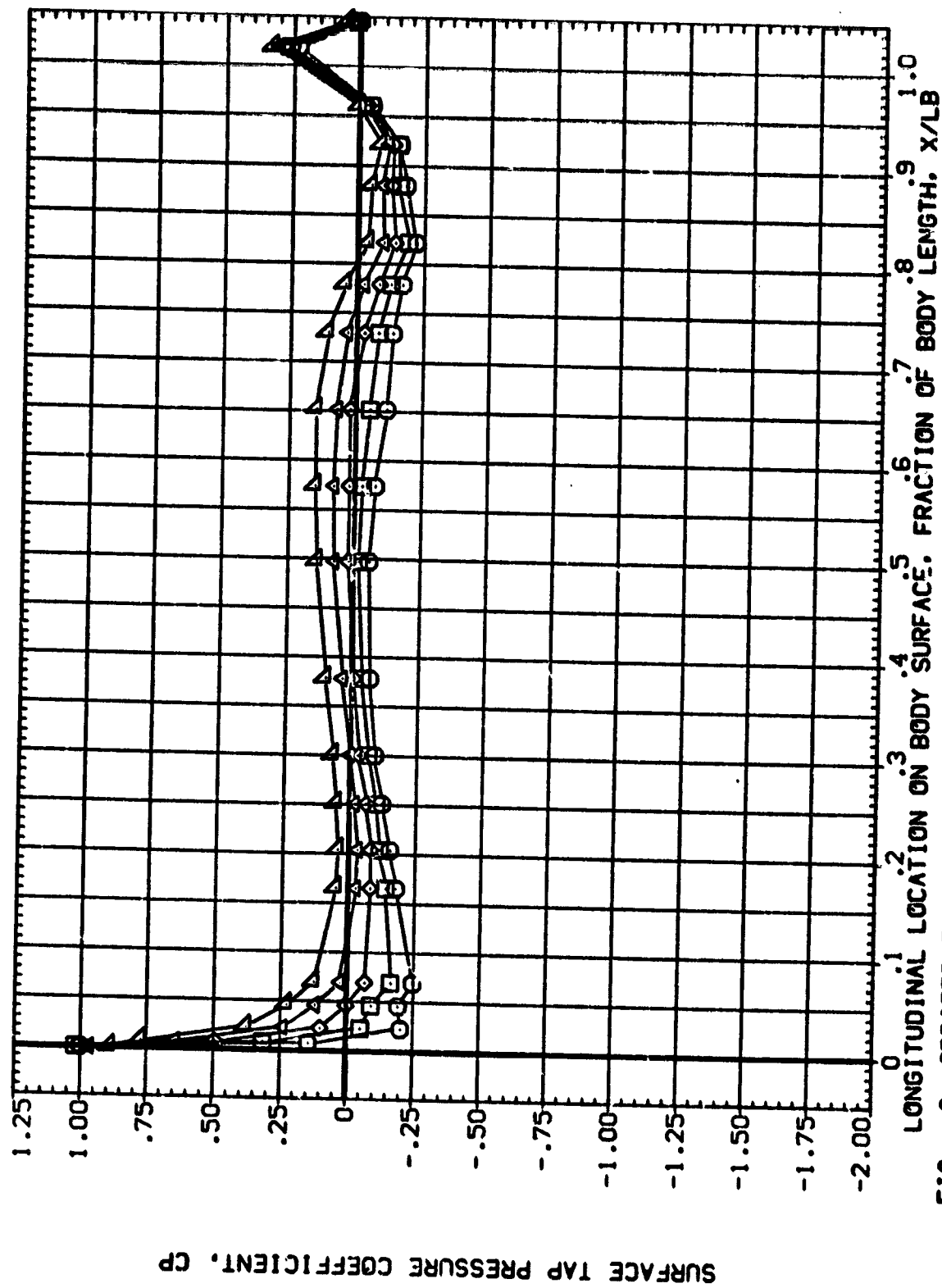


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A143) -140A/B/C/R ORB FUSELAGE (1E8805)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
▽	-4.000	.000	6.000	RUDDER
◇	.000	.000	.000	BOFLAP
□	4.000	.000	.000	L-ELVN
△	8.000	.000	.000	R-ELVN
	12.000	.000	.000	FLACH
				55.000
				.000
				.500



SYMBOL
▽
◇
□
○
△

ALPHA
-4.000
-0.000
4.000
8.000
12.000

PHI
40.000

BETA
8.000

PARAMETRIC VALUES
RUDDER .000 SPOON 55.000
BOFLAP 16.300 L-ELVN .000
R-ELVN .000 MACH .800

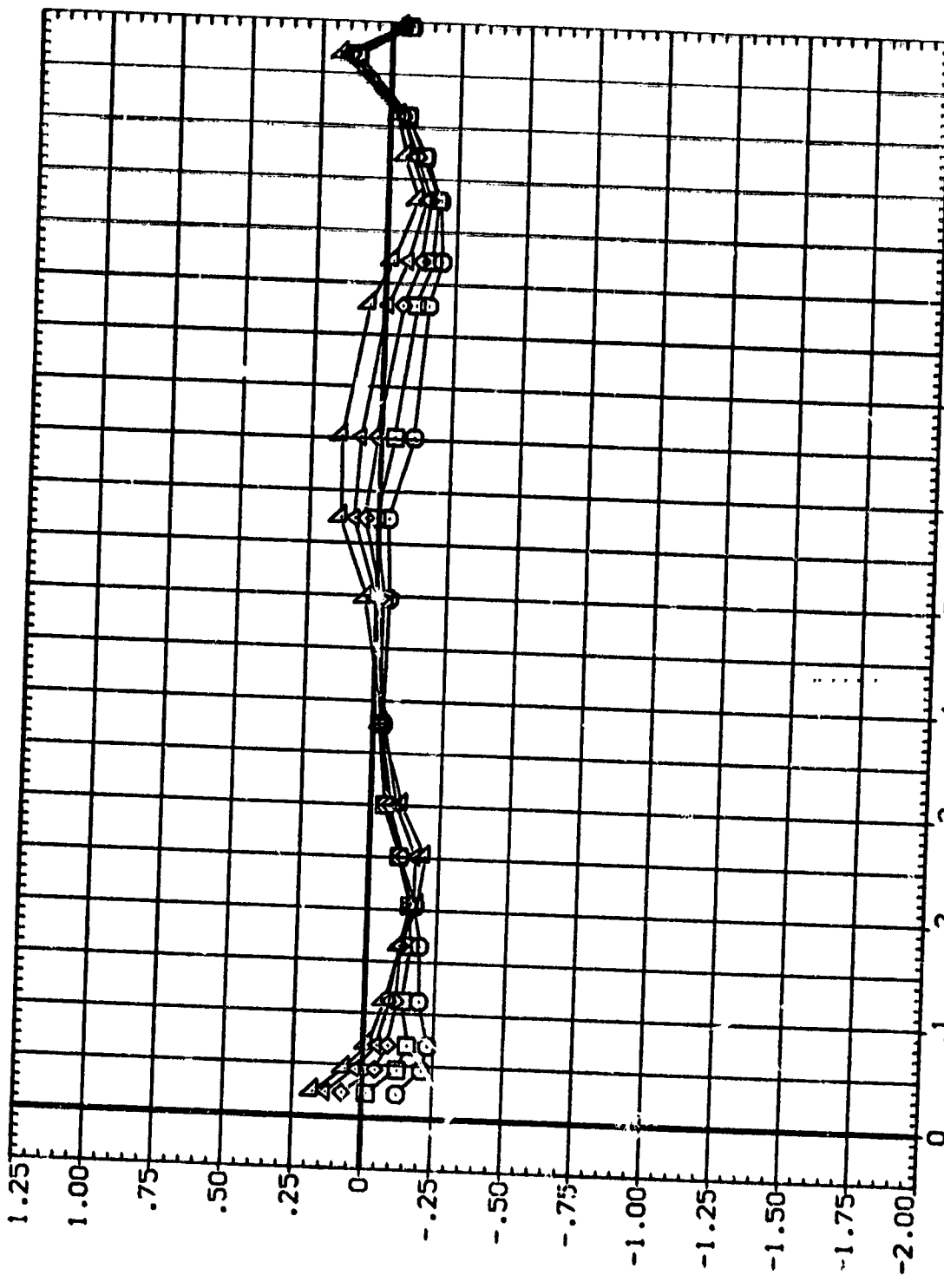


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL ALPHA PHI BETA
 -4.000 120.000 8.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

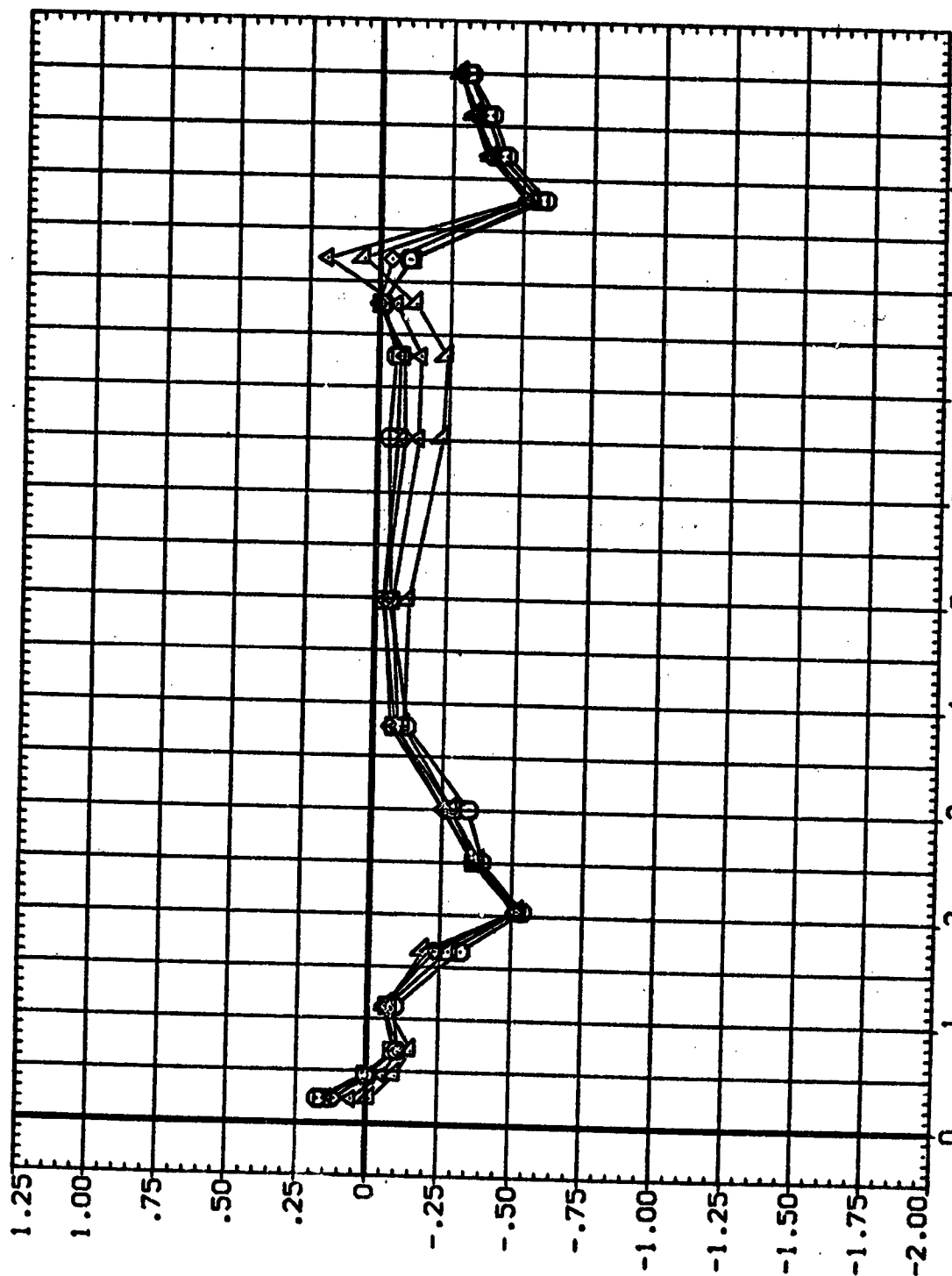


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B05)

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
▽	-4.000	150.000	8.000	RUDDER .000 SPDRWK 55.000
◇	.000			80FLAP 16.300 L-ELVN .000
□	4.000			R-ELVN .000 MACH .600
△	8.000			
▽	12.000			

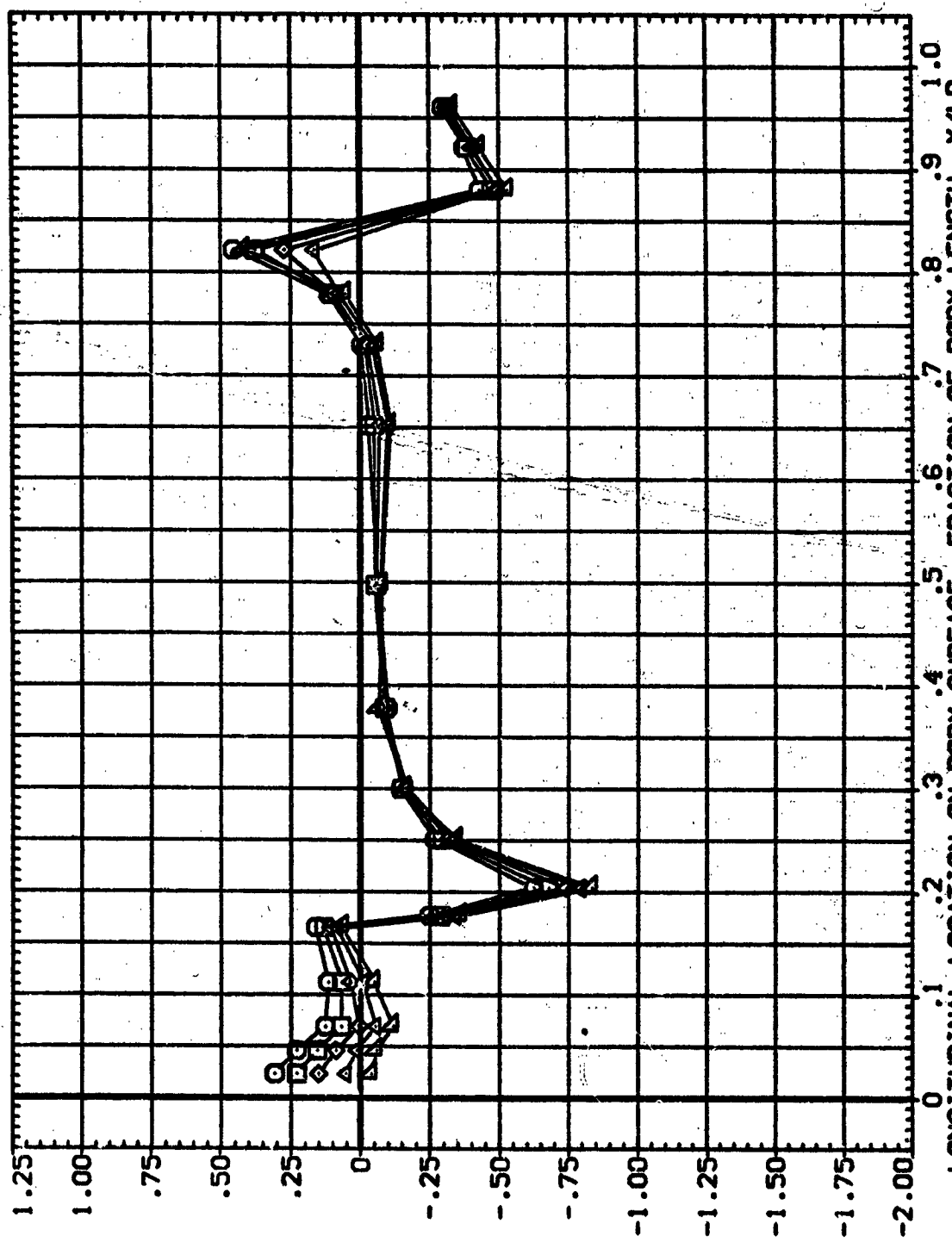
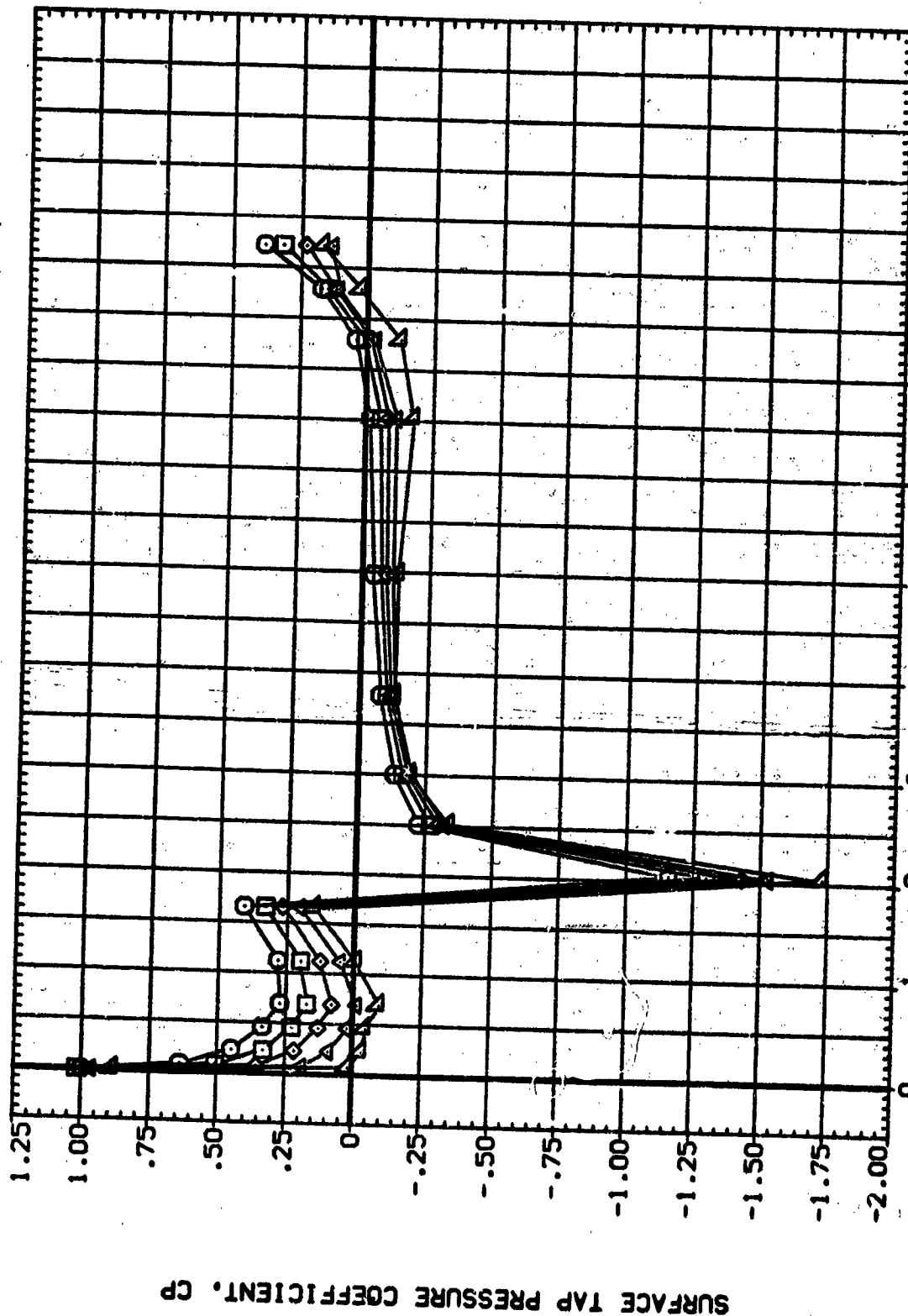


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL ALPHA P:1 BETA
 -4.000 180.000 8.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBY 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B04)

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI .000
 BETA -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 NACH .300

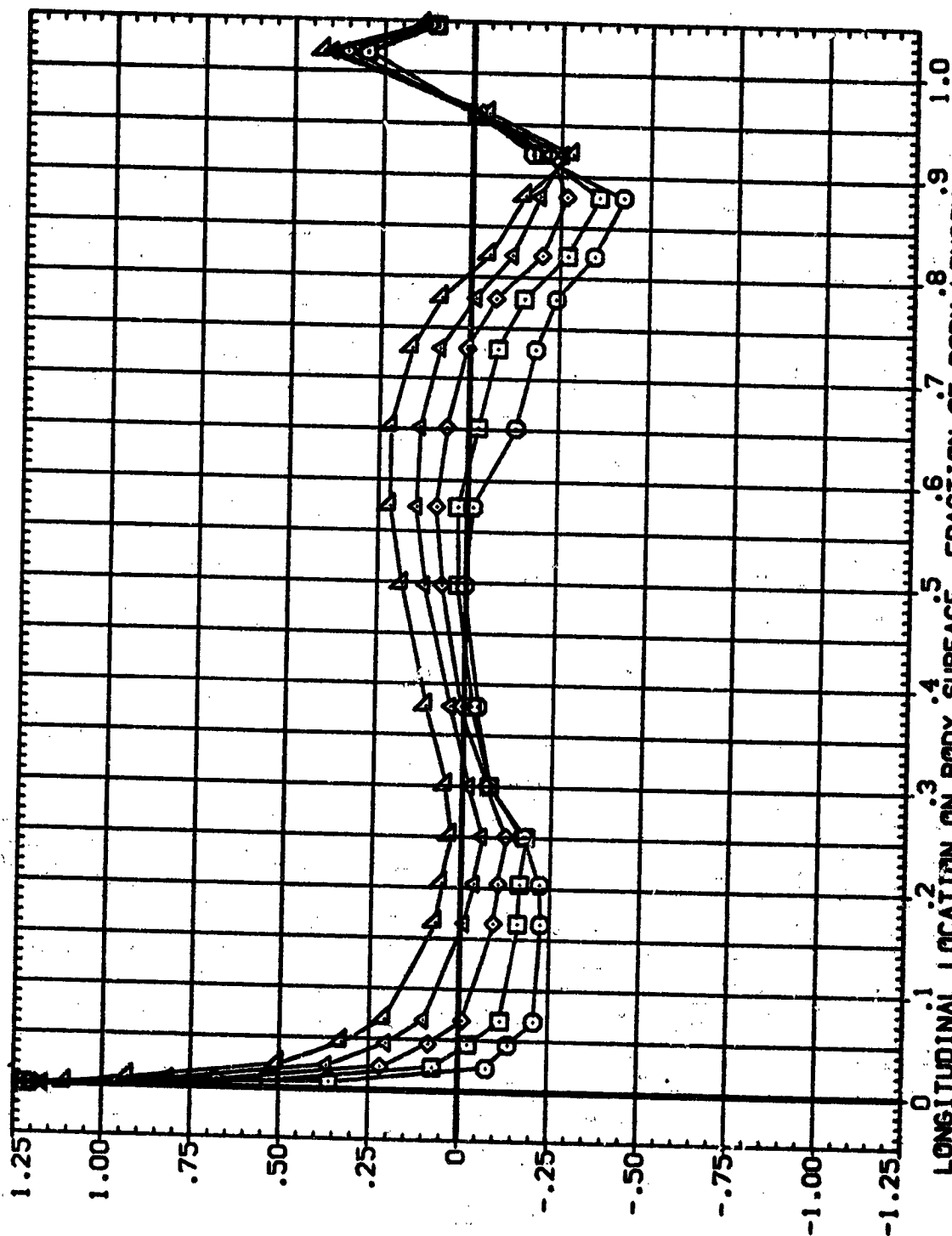


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

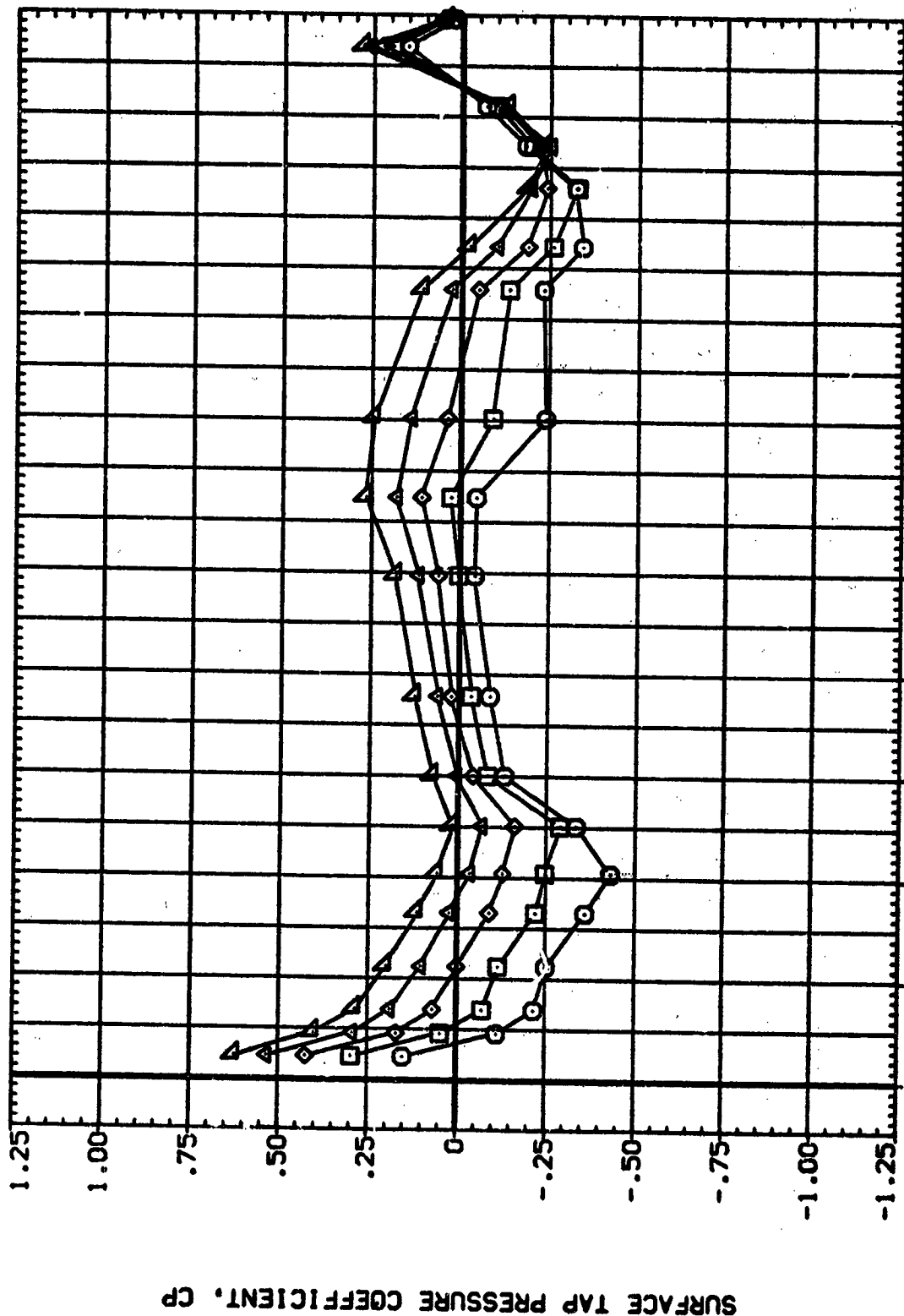
SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .900



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

Symbol 

ALPHA	PHI	BETA
-4.000	90.000	-4.000
.000		
4.000		
8.000		
12.000		

PHI
90.000

BETA
-4.000

RUDDER
BOFLAP
R-ELVN

PARAMETRIC VALUES	
.000	SPDRBK
16.300	L-ELVN
.000	HACH
.500	
.000	

SPORTS

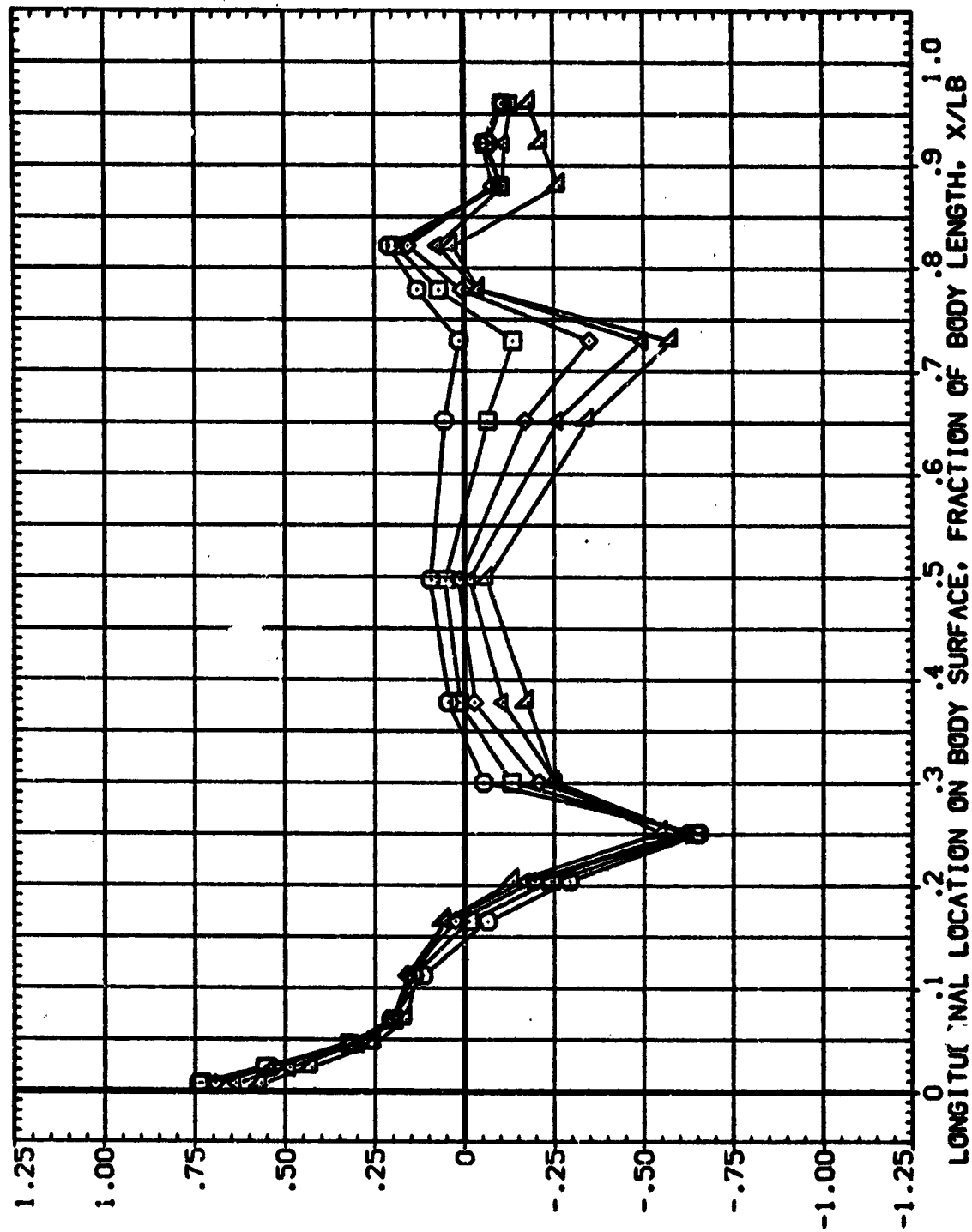


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ○
 ◇
 △
 □
 ▽

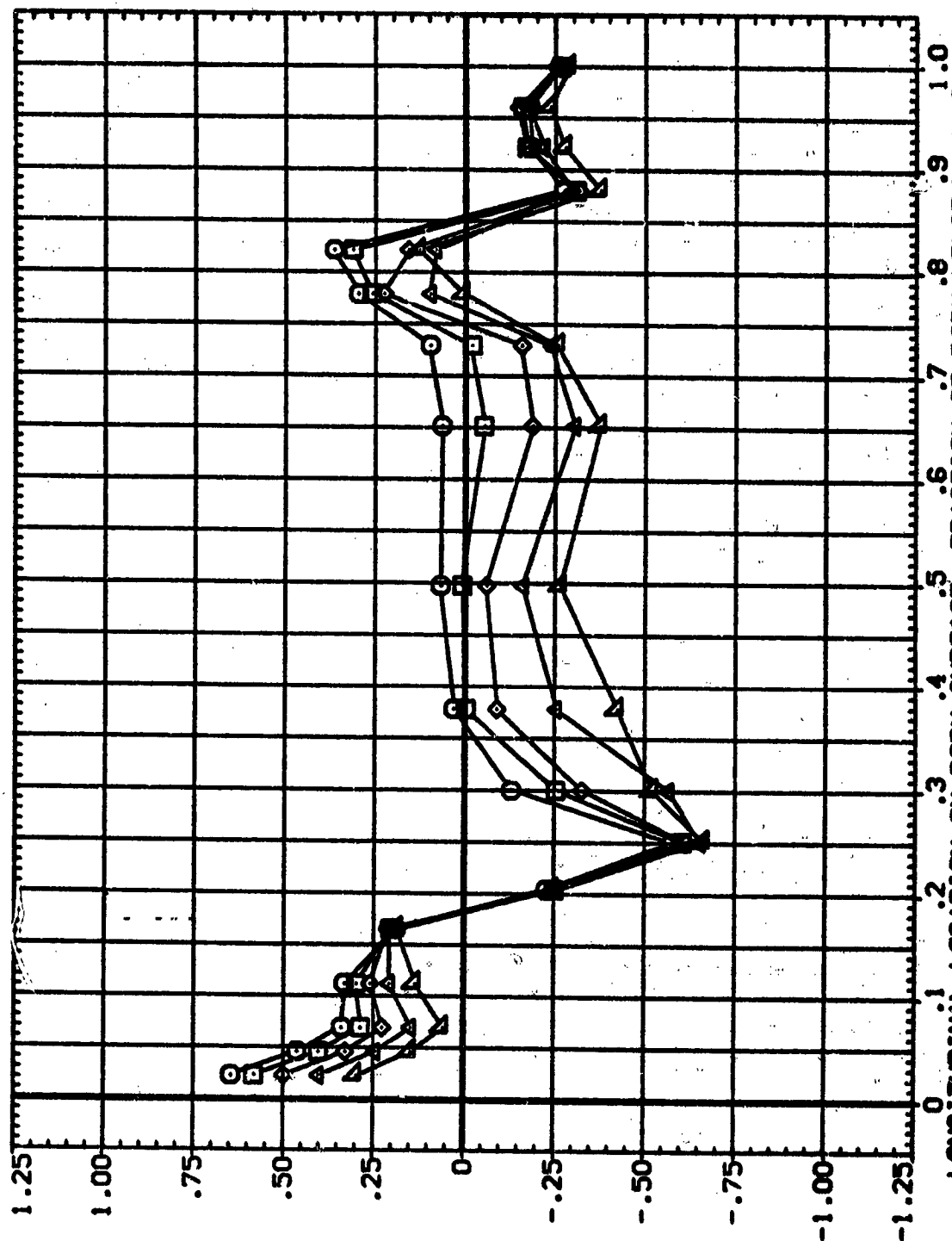
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	SPDRBK	55.000
80FLAP	.000	.000
R-ELVN	16.300	.000
	.000	.500
		MACH



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8804)

SYMBOL	ALPHA	PHI	BETA	RUDER	SOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRX	L-ELVN	NACH
◇	-4.000	150.000	-4.000				.000	.000	.000	.000
◇	.000						16.300	.000		
◇	4.000									
◇	8.000									
◇	12.000									

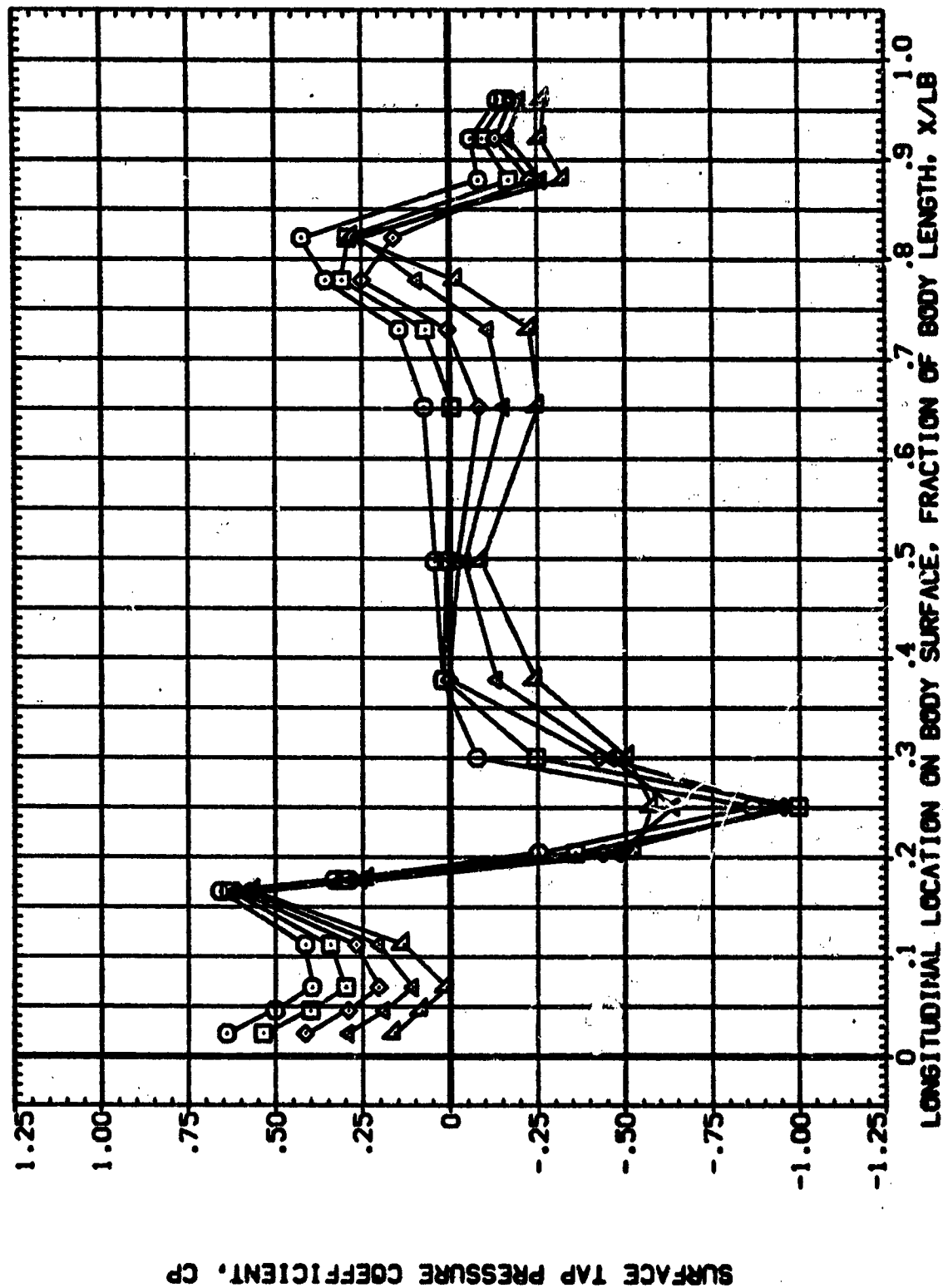


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

(128804)

AMES 11-07310A(148) -140A/B/C/R ORB FUSELAGE

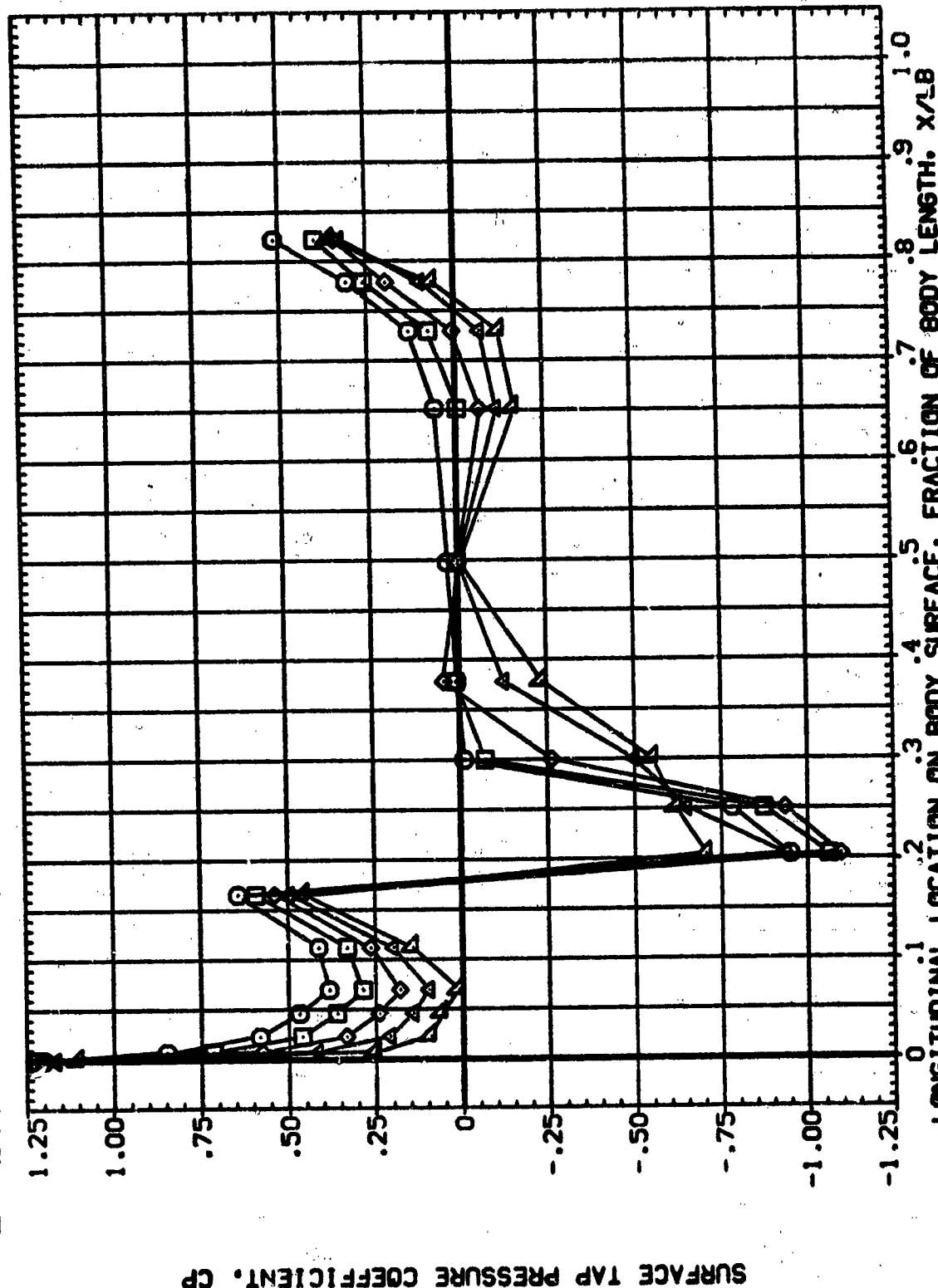
SYMBOL
△
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
180.000

BETA
-4.000

PARAMETRIC VALUES
RUDDER
80FLAP
R-ELVN
.000
18.300
.000
SPDRN
L-ELVN
NACH
.020
.900



SURFACE TAP PRESSURE COEFFICIENT, CP

LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

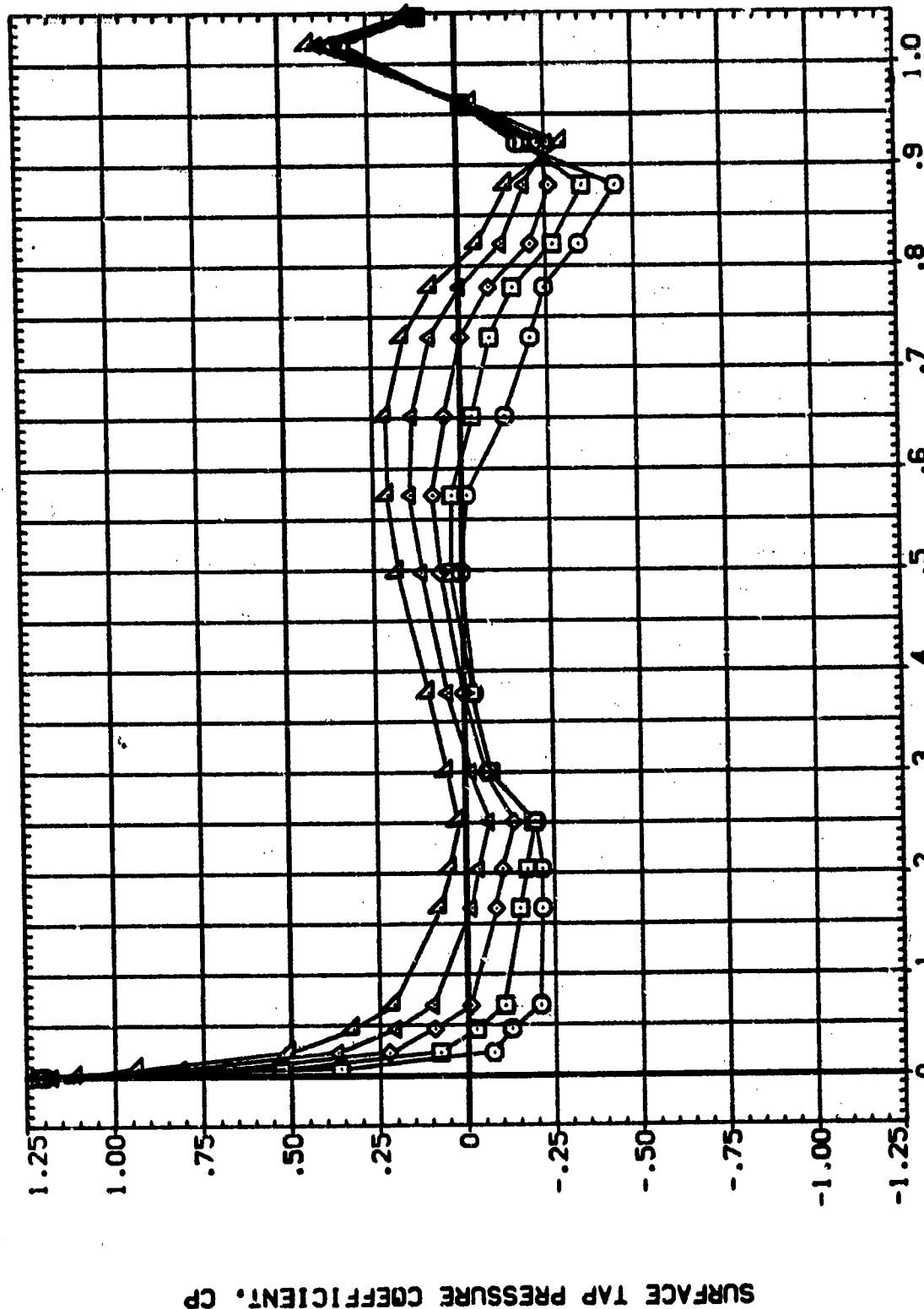
ORBITER FUSELAGE BODY FLAP DEFLECTION 10.2 DEGREES

AMES 11-073(0A148) -140A/B/C/R CRB FUSELAGE (1E8B04)

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BODYFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .900

ALPHA PHI BETA
 -4.000 .000 .000
 4.000 .000 .000
 8.000 .000 .000
 12.000 .000 .000

SYMBOL
 □ ◇ △ ▽



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-07370A148 -140A/B/C/R CRB FUSELAGE

SYMBOL
 ▲
 ◆
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRX 55.000
 SOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .900

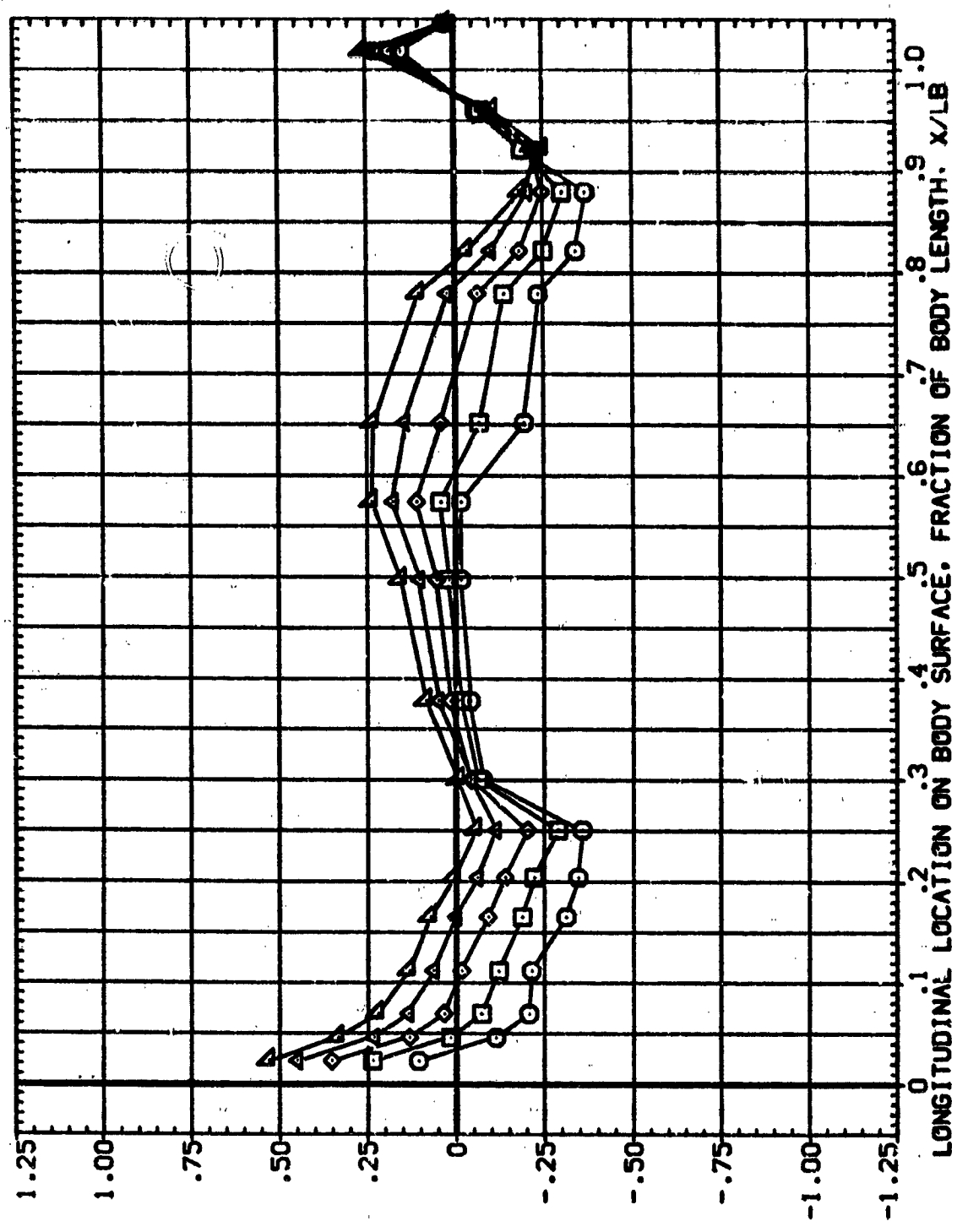


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B04)

SYMBOL	ALPHA	PHI	BETA	RUDER	RUFLAP	R-ELVN	PARAMETRIC VALUES	SPZBRK	L-ELVN	MACH
▽	-4.000	90.000	.000	.000	15.300	.000	55.000	.000	.000	.900
◇	.000									
□	4.000									
△	8.000									
▽	12.000									

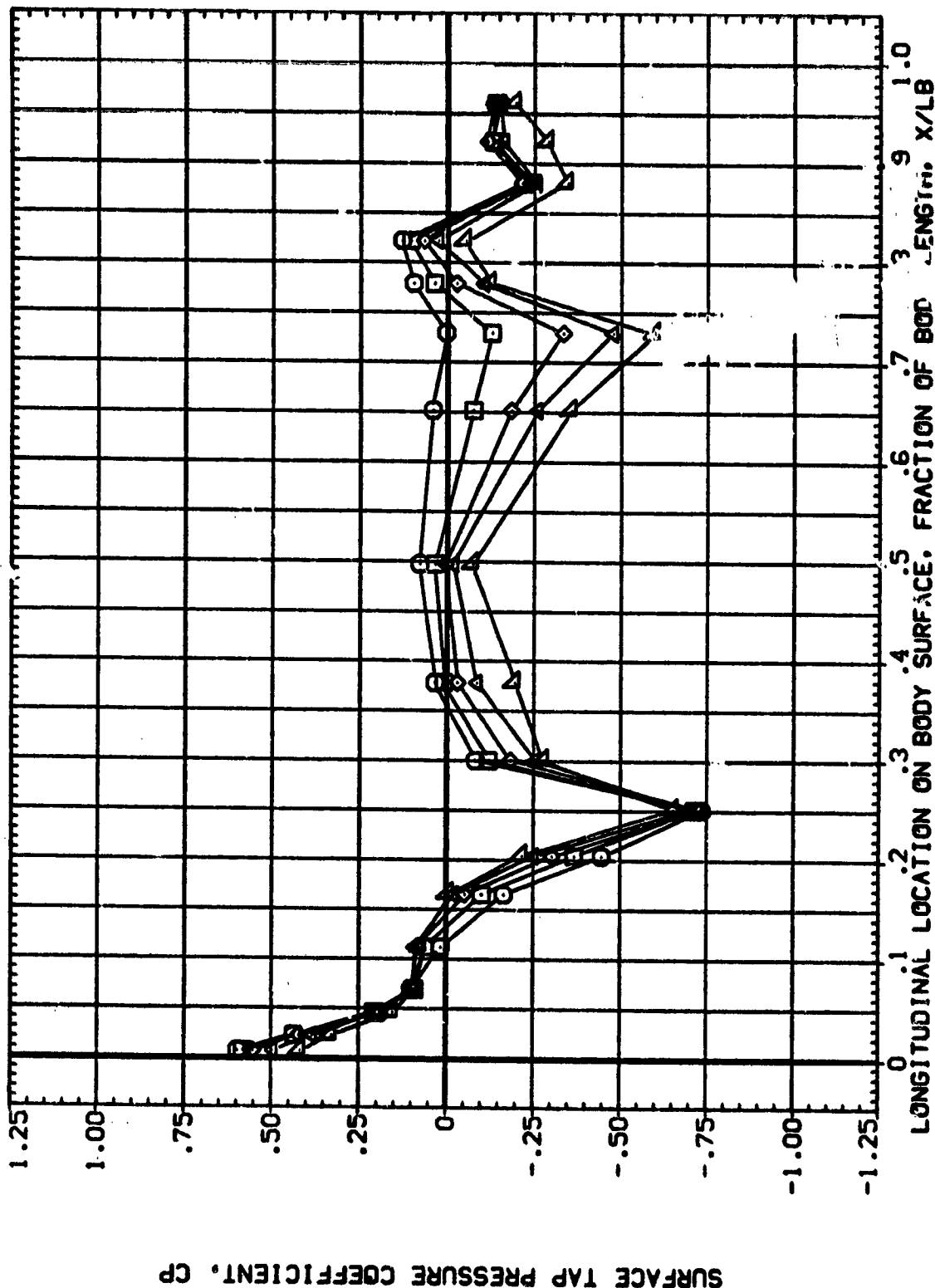


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREE

PARAMETRIC VALUES
 RUDDER .000 SPDRBY 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .900

ALPHA PHI BETA
 -4.000 120.000 .000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ○
 △

SURFACE TAP PRESSURE COEFFICIENT, CP

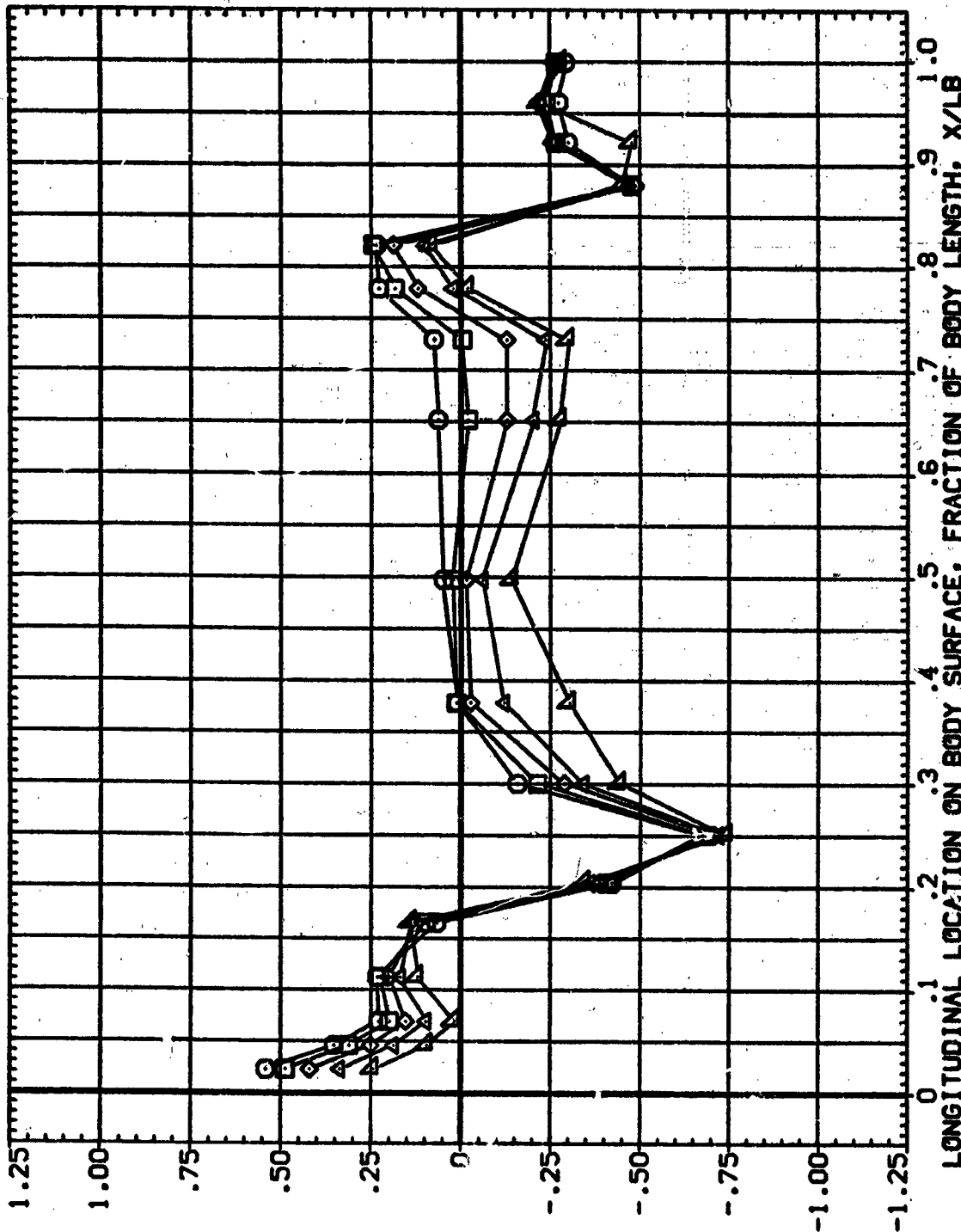


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B04)

PARAMETRIC VALUES
 RUDDER .000 SP1BRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MAC-1 .900

SYMBOL
 ▽ ◆ □ ◇ ▴
 ALPHA PHI BETA
 -4.000 150.000 .000
 .000
 4.000
 8.000
 12.000

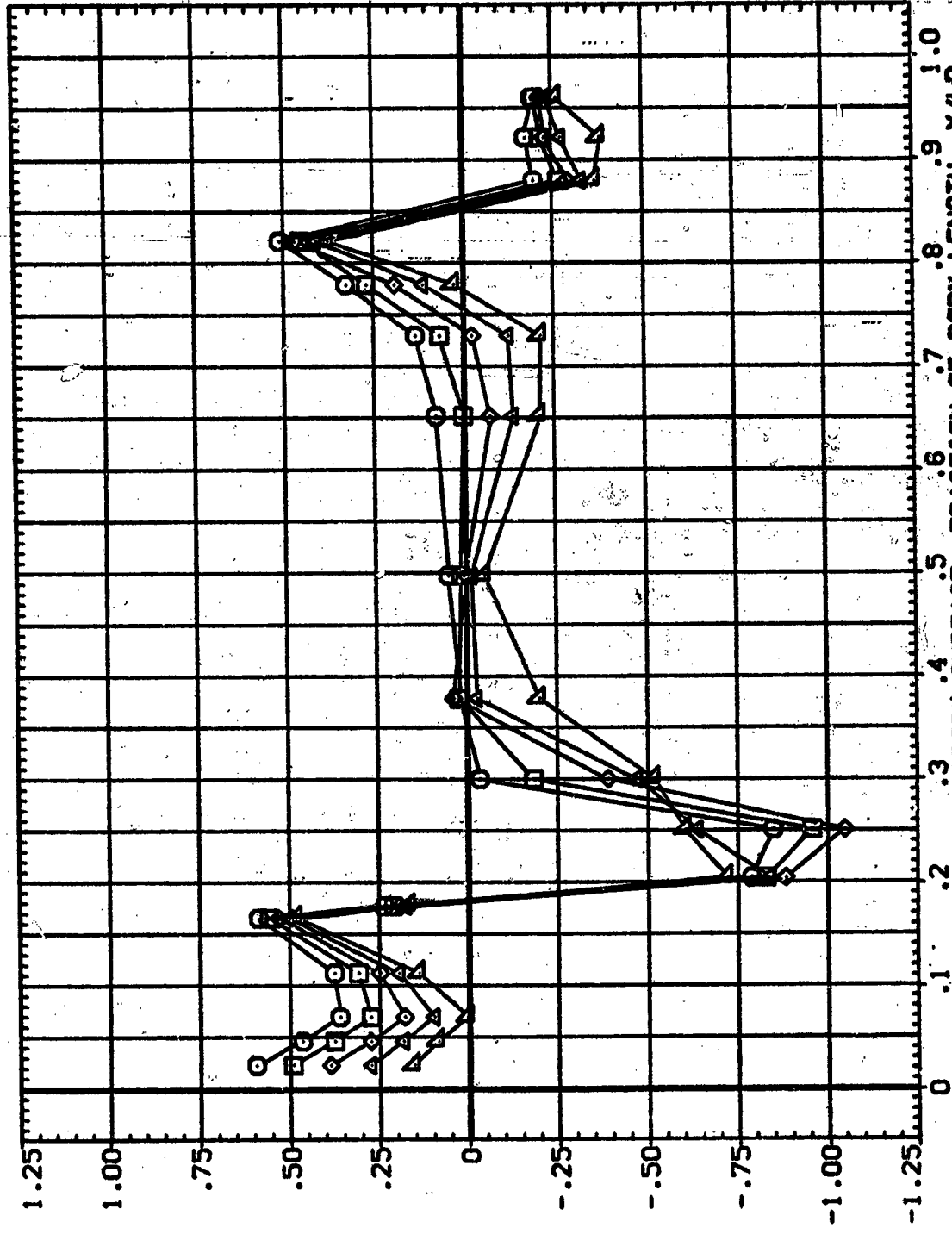


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES
▽	-4.000	180.000	.000	.000	.000	.000	55.000
◇	.000			.000	.000	.000	.000
□	4.000			.000	.000	.000	.000
△	8.000			.000	.000	.000	.000
	12.000			.000	.000	.000	.000

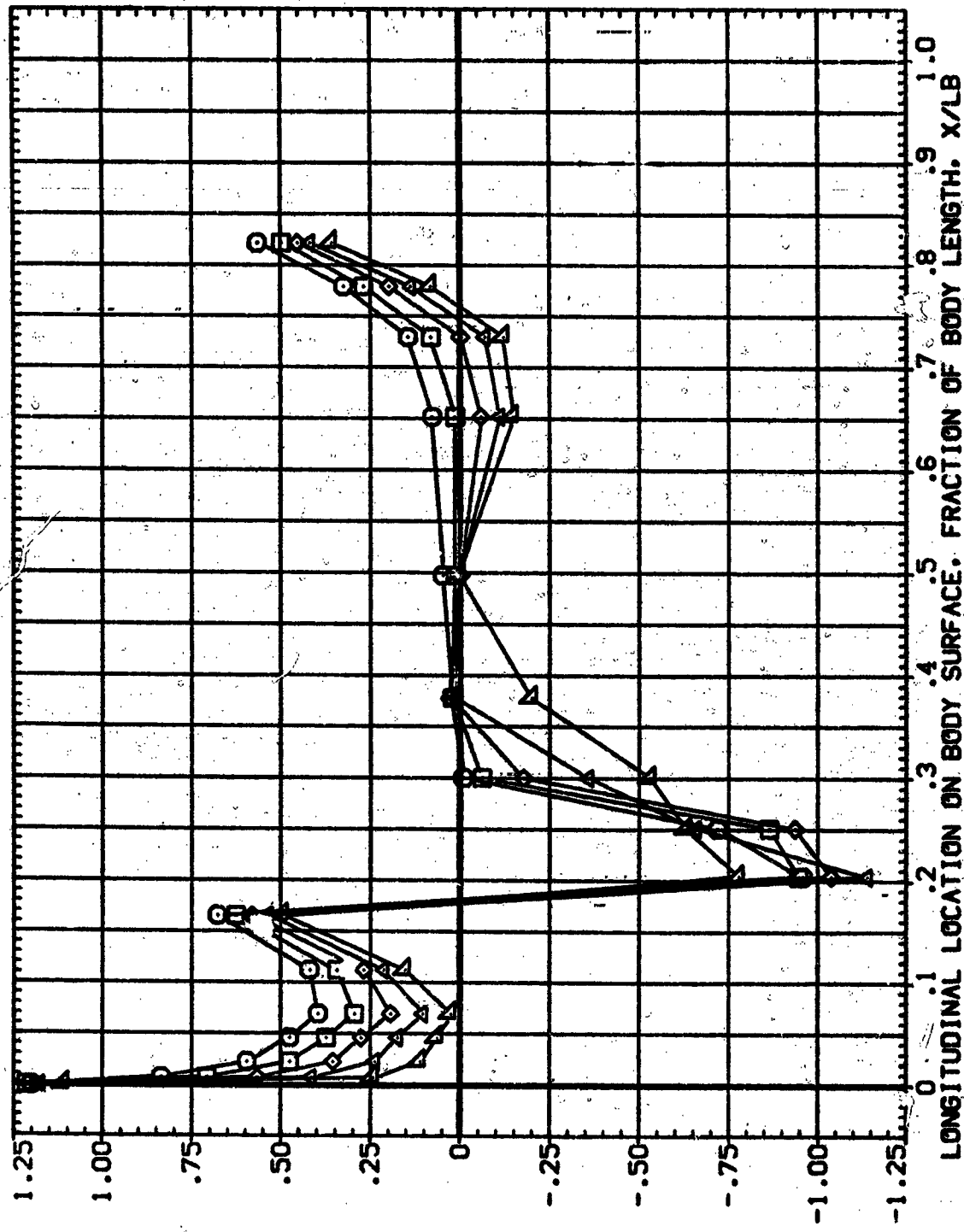


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B04)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.000	4.000	BOFLAP	.000 SPDRK
□	.000	.000	.000	R-ELVN	16.300 L-ELVN
◇	4.000	.000	.000		.000 MACH
△	8.000	.000	.000		.500
▽	12.000	.000	.000		

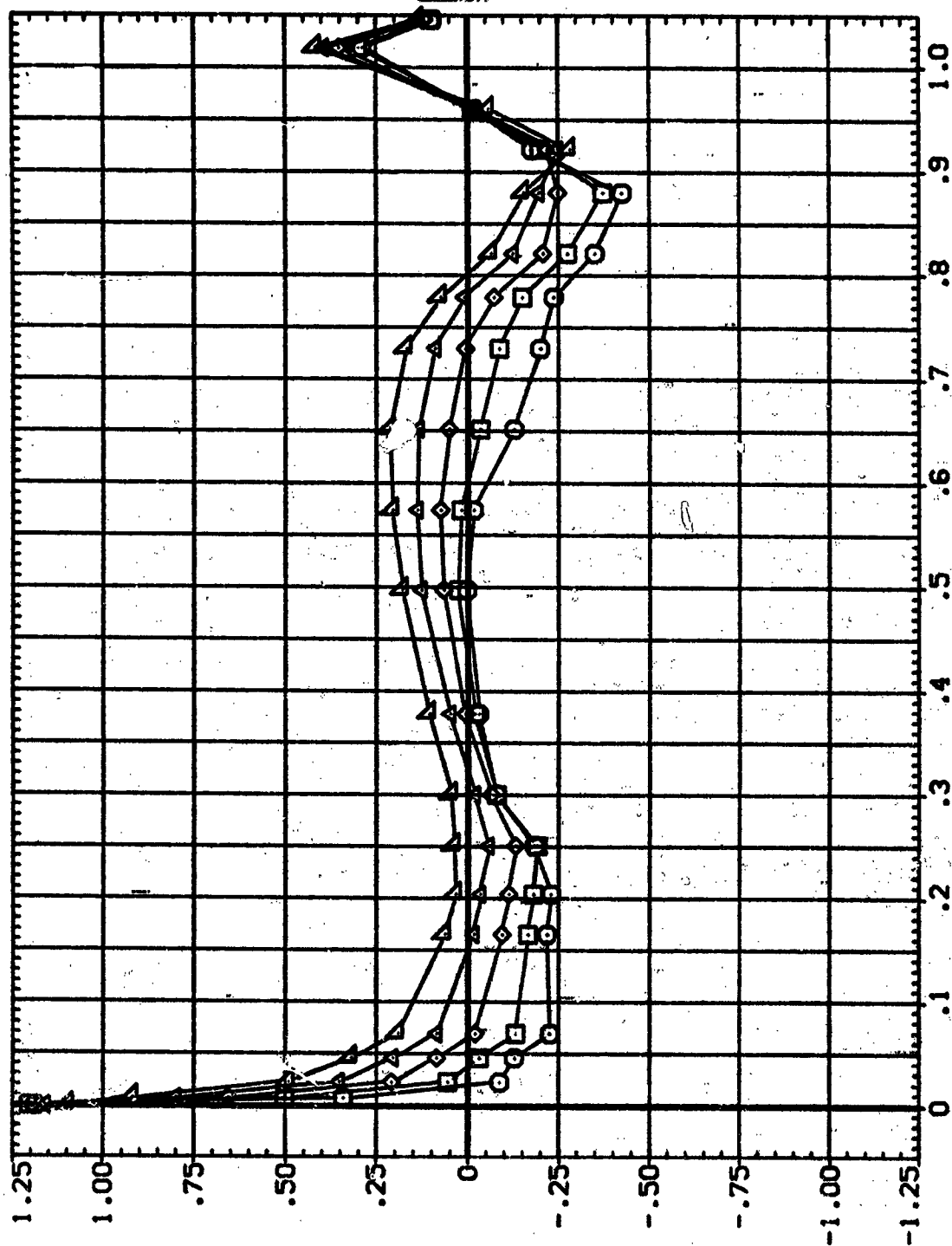


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

Symbol 

ALPHA	PHI	SETA
-4.000	40.000	4.000
.000		
4.000		
8.000		
12.000		

PARAMETRIC VALUES	
RUDER	.000
BOFLAP	16.300
R-ELVN	.000
	MACH
	.900
	.000
	55.000

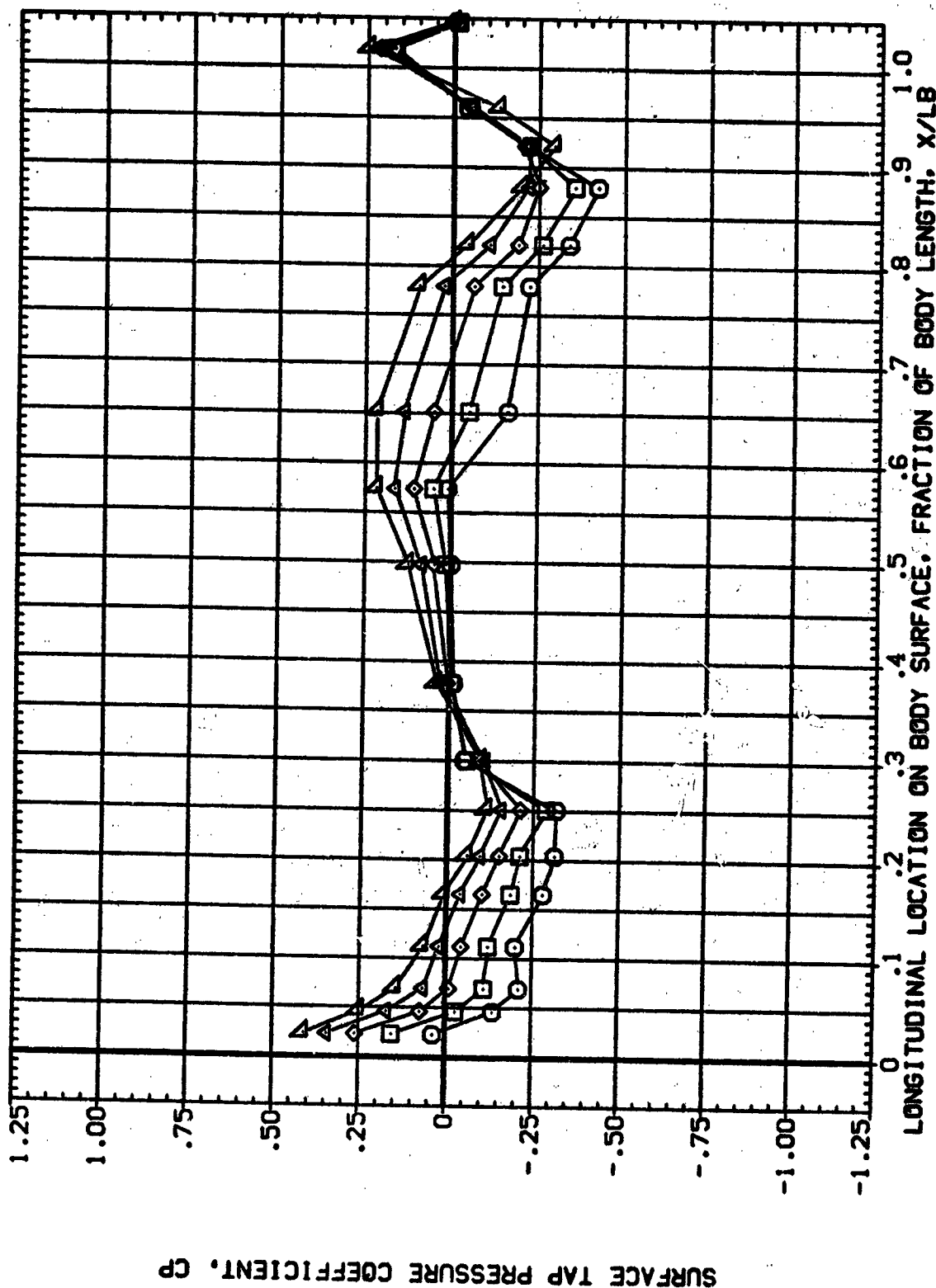


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B04)

SYMBOL
 □
 ◇
 △
 ▲

ALPHA PHI BETA
 -4.000 50.000 4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPGRK 55.000
 SDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .900

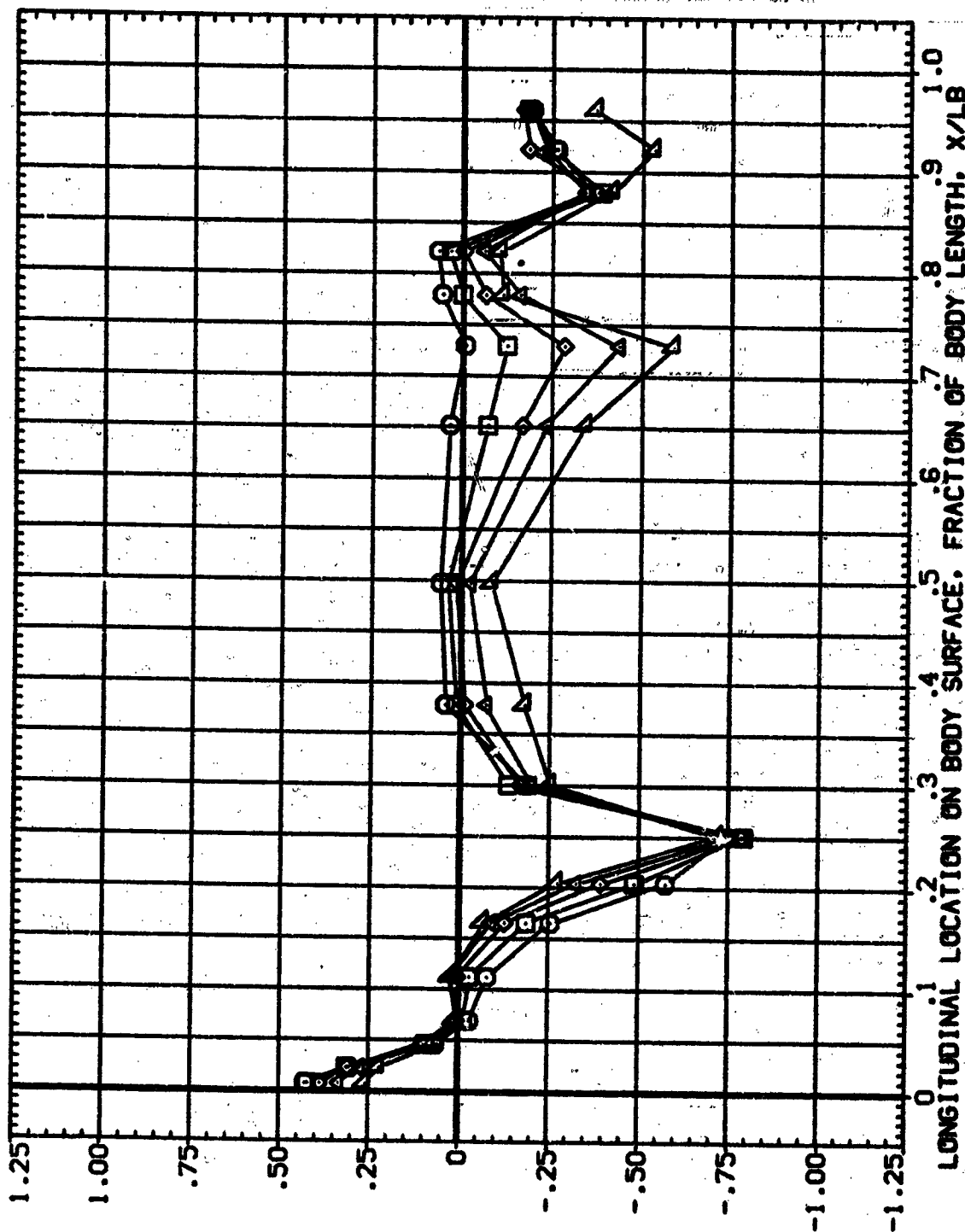


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	120.000	4.000	BOFLAP	.000 SPDRX
◇	.000			R-ELVN	16.300 L-ELVN
△	4.000				.000 MACH
▽	8.000				.500
▽	12.000				

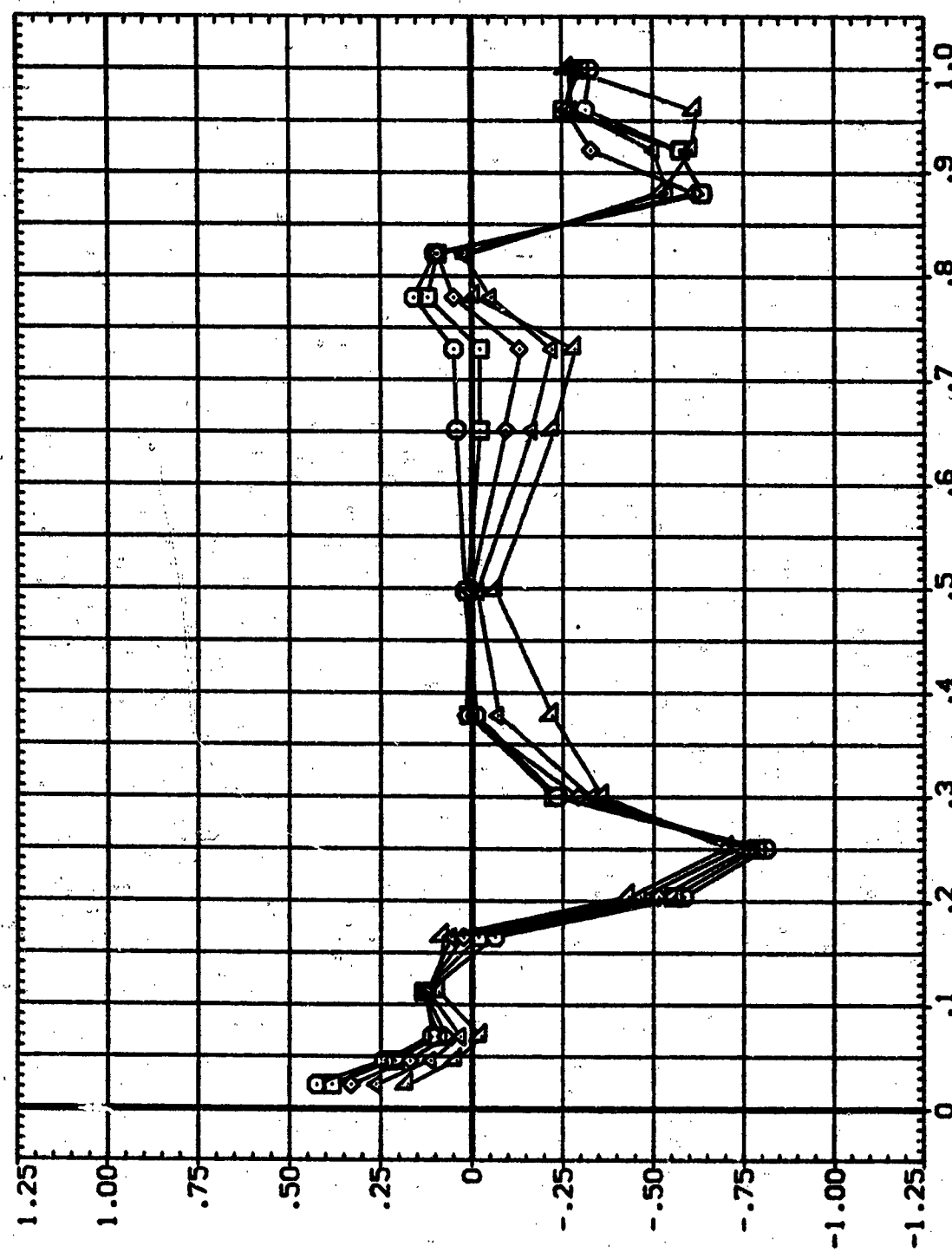


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B04)

SYMBOL	ALPHA	PHI	BETA	R-ELVN	BOFLAP	RUGGER	PARAMETRIC VALUES
◇	-4.000	150.000	4.000	.000	.000	.000	SPDRX
□	.000			.000	.000	.000	L-ELVN
◇	4.000			.000	.000	.000	MACH
△	8.000			.000	.000	.000	
▽	12.000			.000	.000	.000	

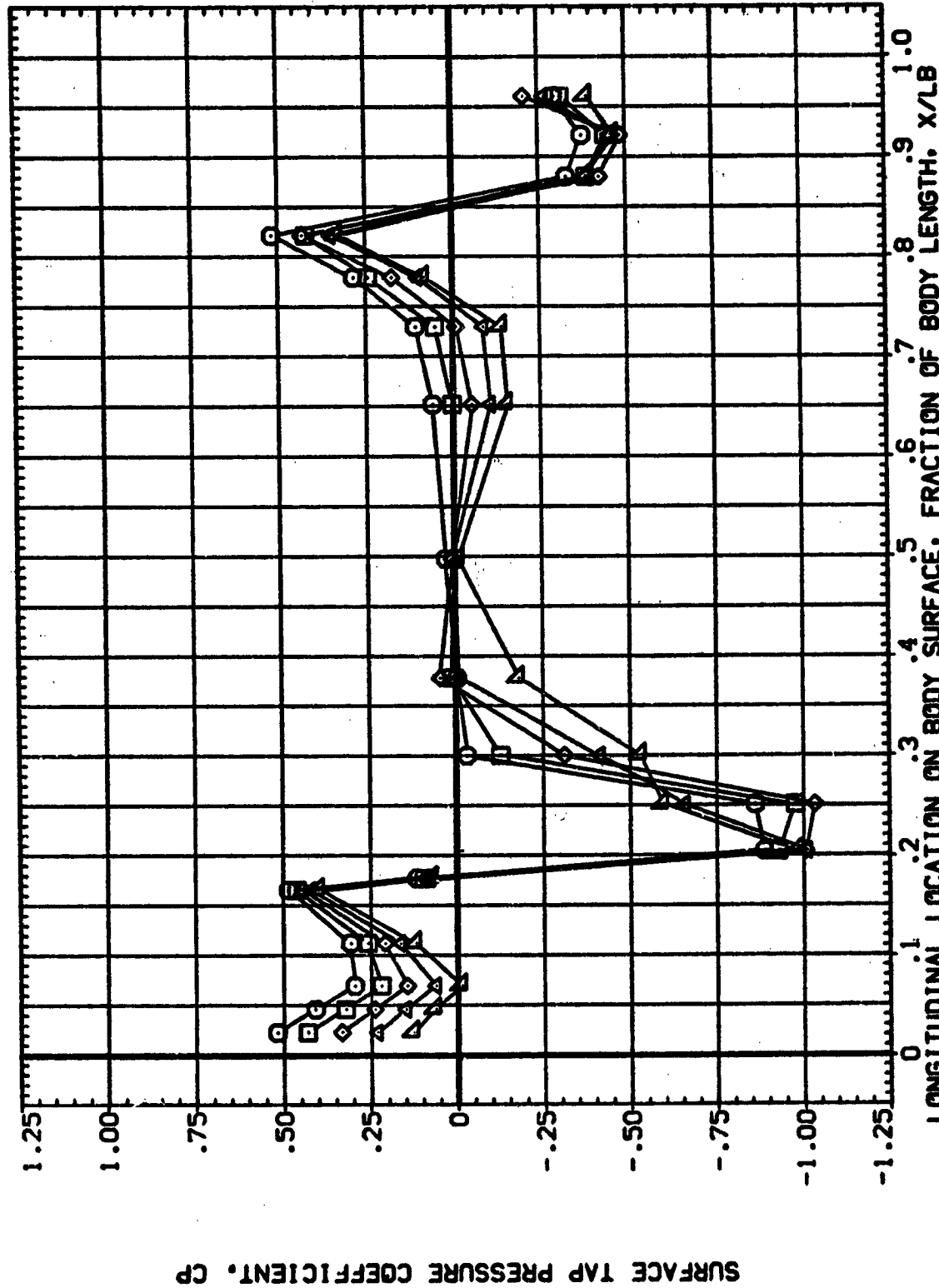


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
▽
◇
□
△

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
180.000

BETA
4.000

PARAMETRIC VALUES
RUDDER .000 SP08PX 55.000
BDFLAP 16.300 L-ELVN .000
R-ELVN .000 HACH .500

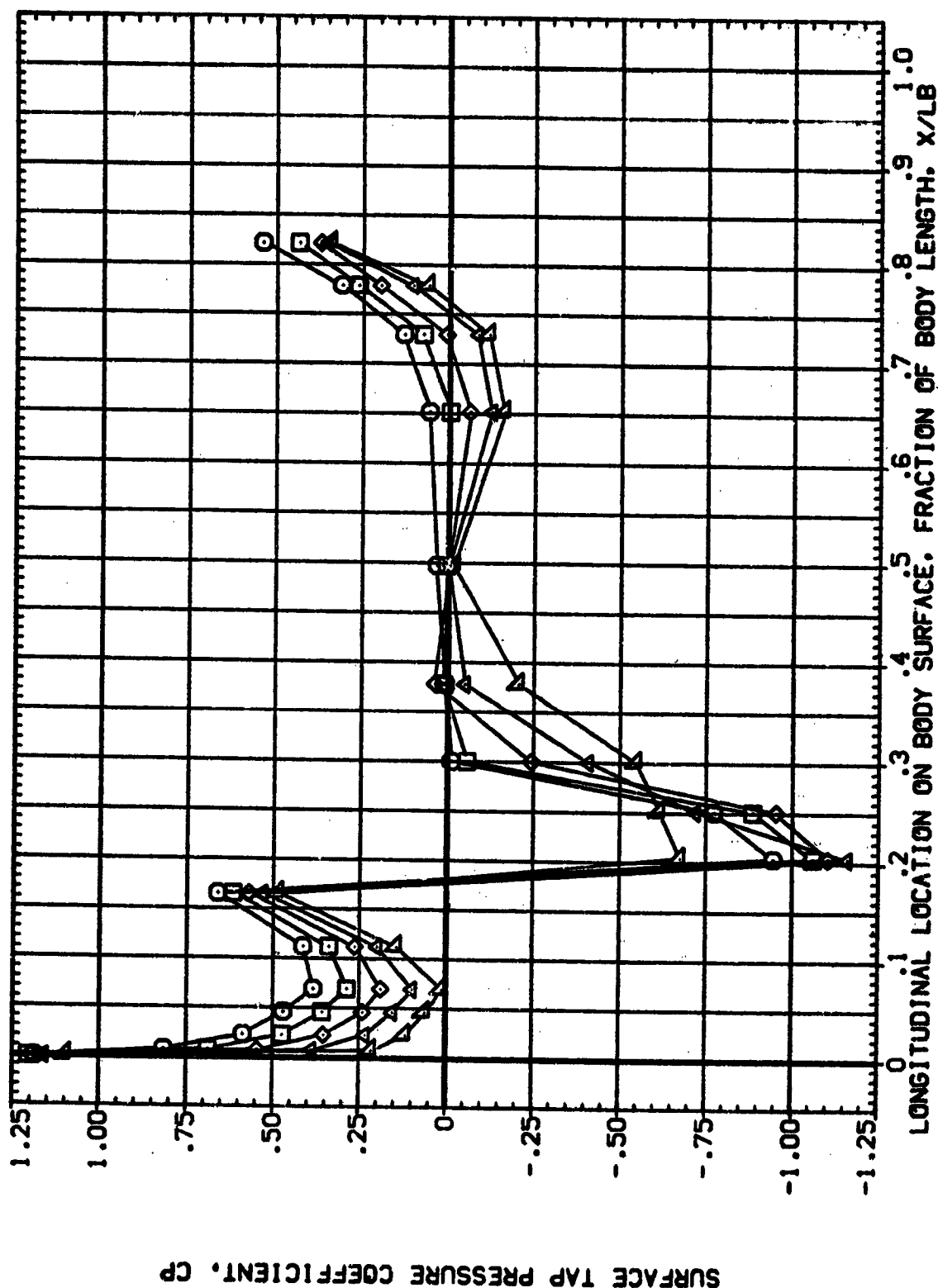


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B03)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BDFLAP	R-ELVN	PARAMETRIC VALUES	SPDRX	L-ELVN	MACH
▽	-4.000	.000	-4.000					.000		.55.000
◇	.000	.000						.000		.000
□	4.000							.000		1.100
△	8.000									
▽	12.000									

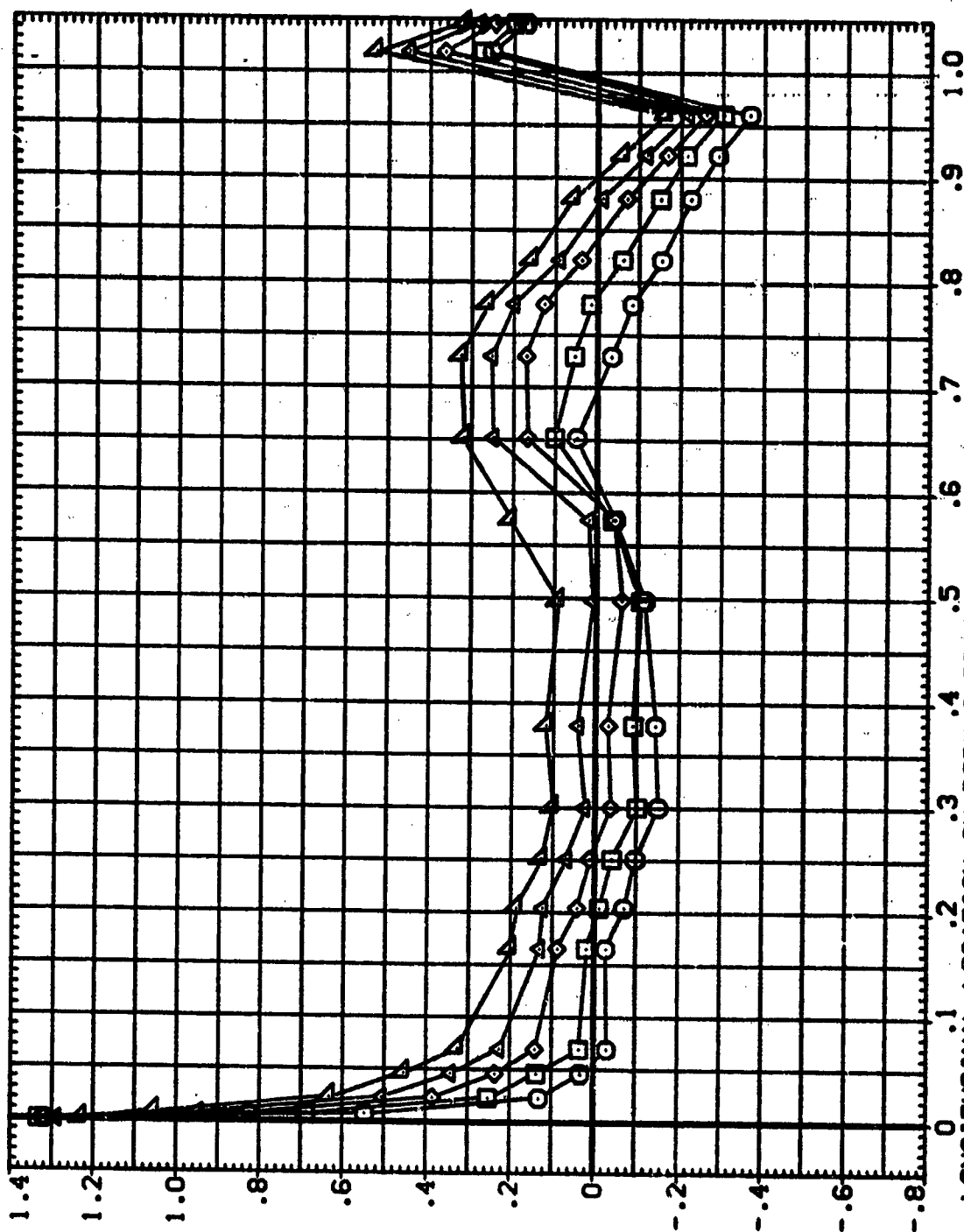


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL 00044

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI
40.000

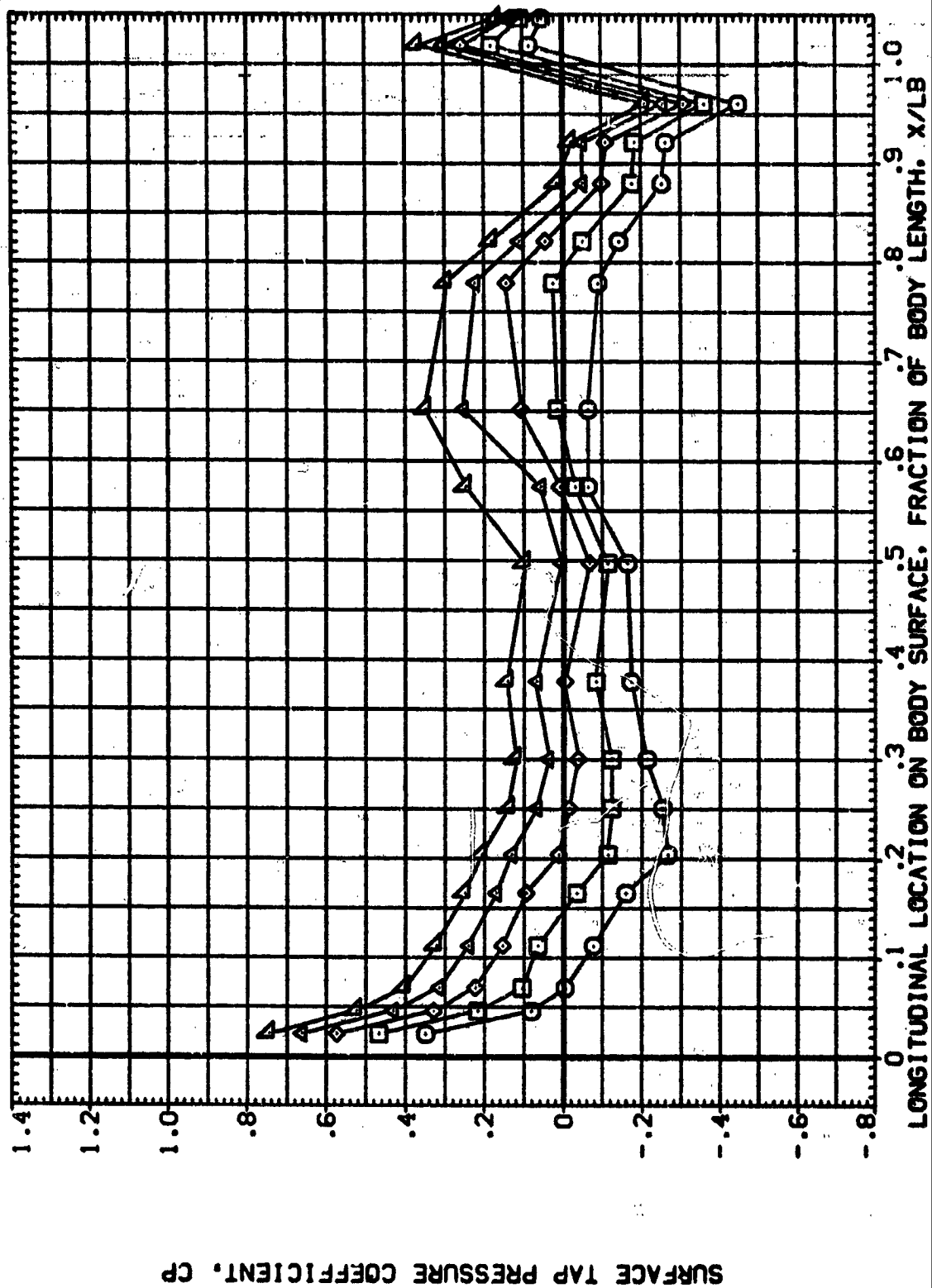
BETA
-4.000

RUDDER
BOFLAN
R-ELV

PARA
16.30
.00

HOW
L-ELV
SPOR
NTVA 21
IC VALU

88



AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B03)

SYMBOL	PARAMETRIC VALUES	
	RUDDER	SPDRK
△	BOFLAP	16.300
◇	R-ELVN	.000
□		L-ELVN
○		MACH
		35.000
		.000
		1.100

ALPHA	PHI	BETA
-4.000	90.200	-4.000
.000		
4.000		
8.000		
12.000		

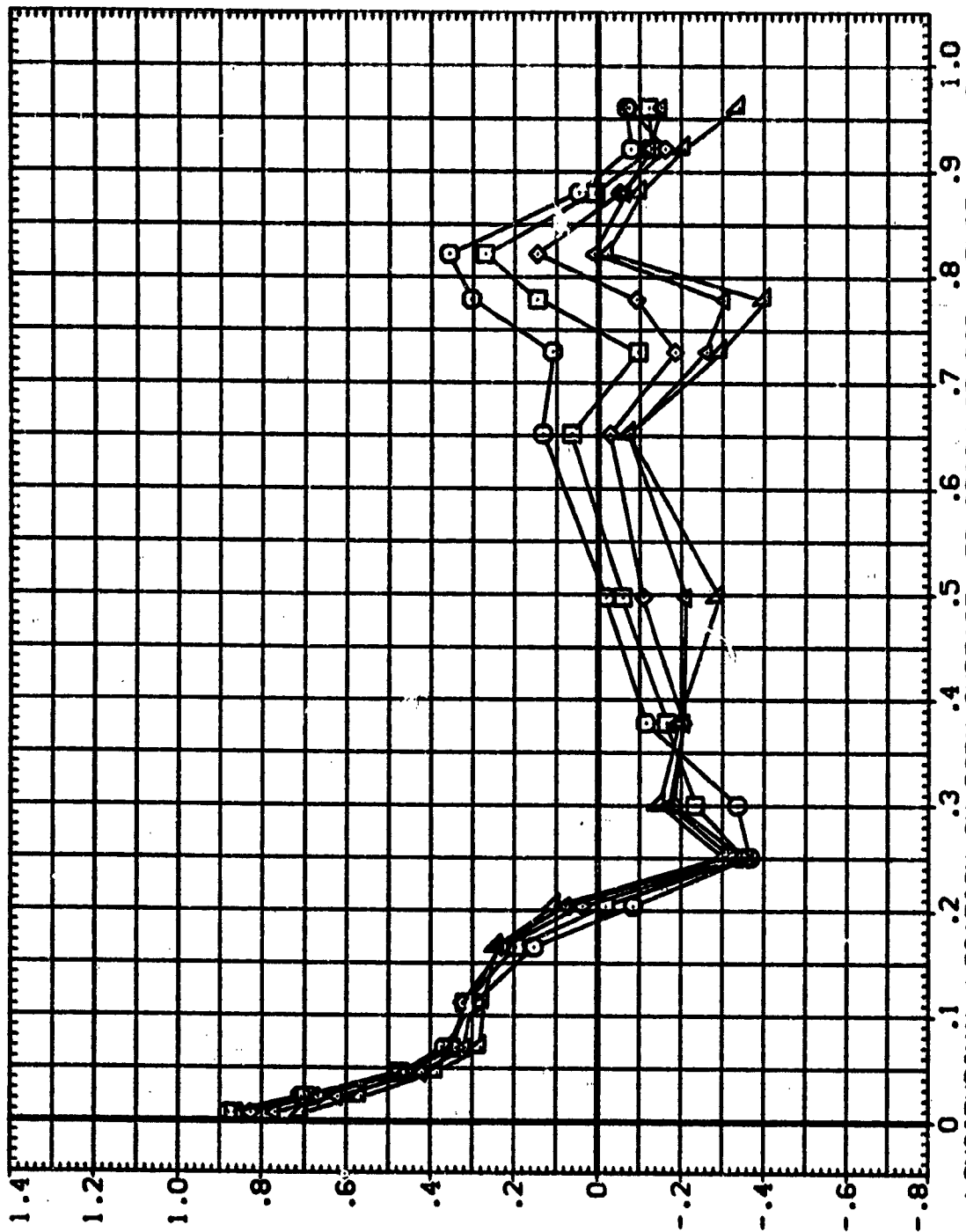


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◇
 □
 ◊
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 -4.000

PARAMETRIC VARIATION
 RUDDER
 .000
 16.300
 .000

SPD IN
 L-ELVN
 MACH
 55.000
 .000
 1.100

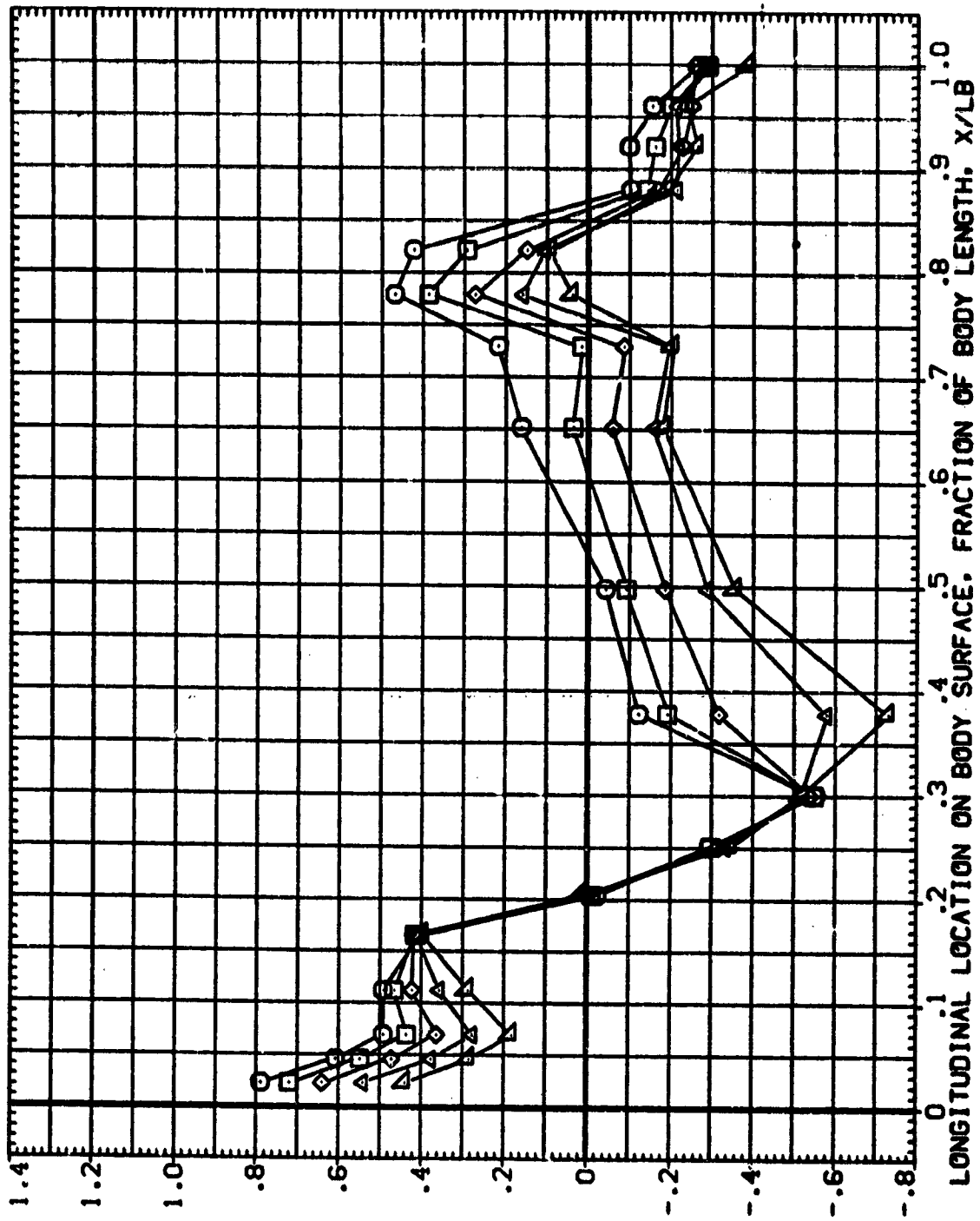


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA PHI BETA
 -4.000 150.000 -4.000
 .000 .000 .000
 4.000 4.000 4.000
 8.000 8.000 8.000
 12.000 12.000 12.000

PARAMETRIC VALUES
 RUDDER .000 SPOROK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

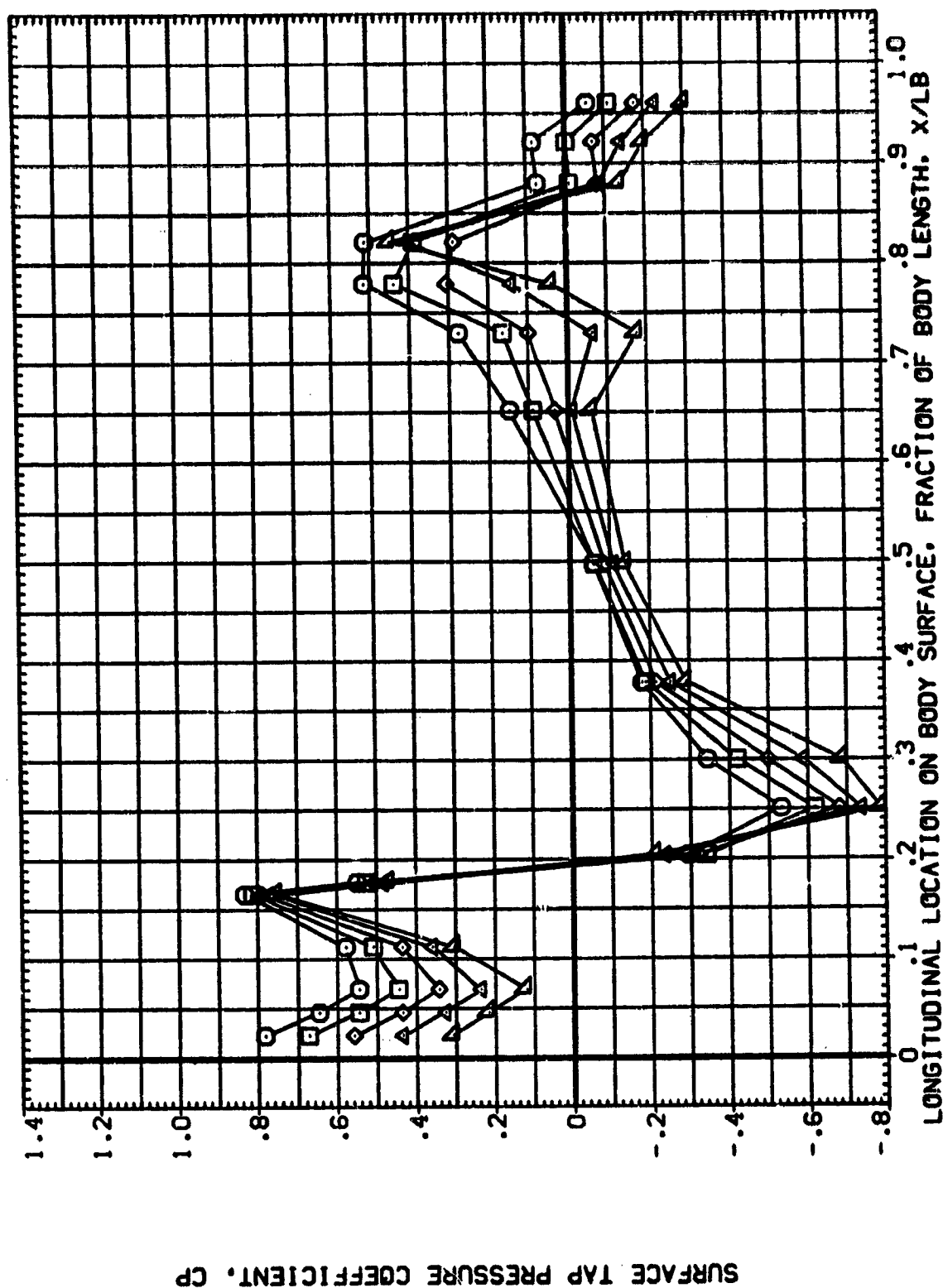


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽ □ ◇ ◊ △

ALPHA PHI BETA
 -4.000 180.000 -4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

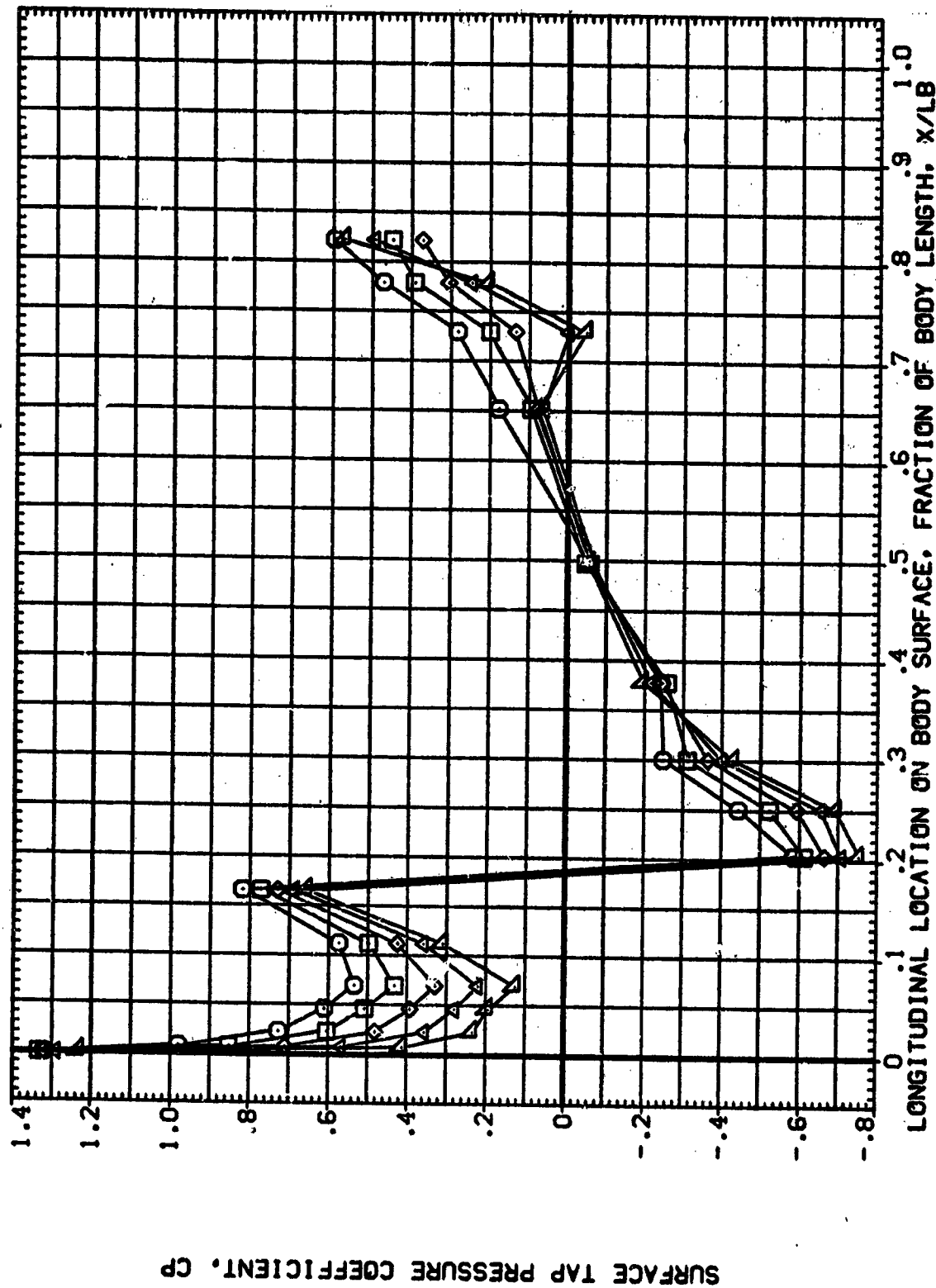


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

(1E8B03)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI .000
BETA .000

PARAMETRIC VALUES
RUDDER .000 SPDRBK .000
BDFLAP 16.300 L-ELVN .000
R-ELVN .000 NACH 1.100

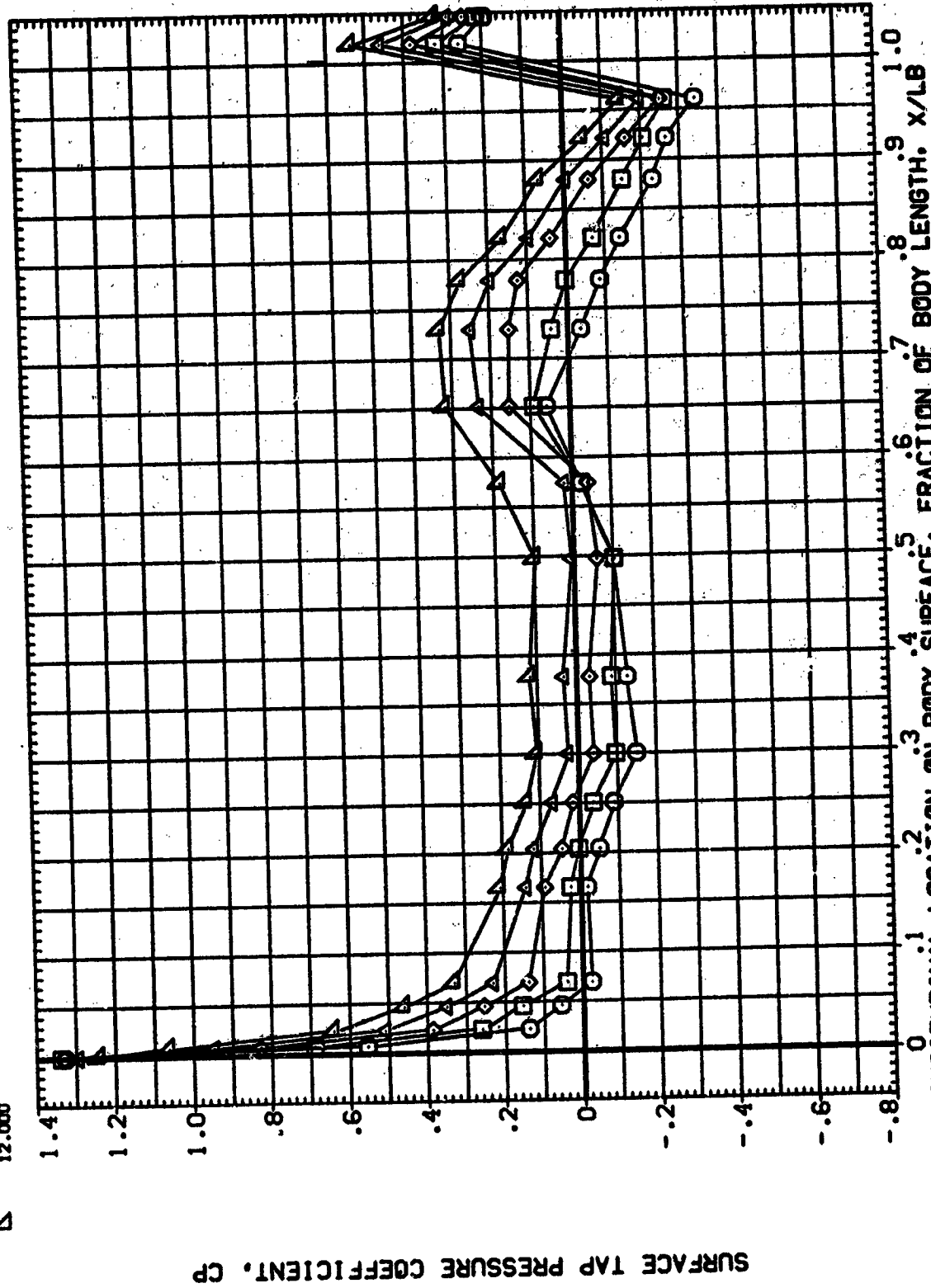


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI 40.000
BETA .000

RUDDER
80FLAP
R-ELVN

PARAMETRIC VALUES
.000 55.000
18.300 SPDRK
.000 L-ELVN
.000 MACH
1.100

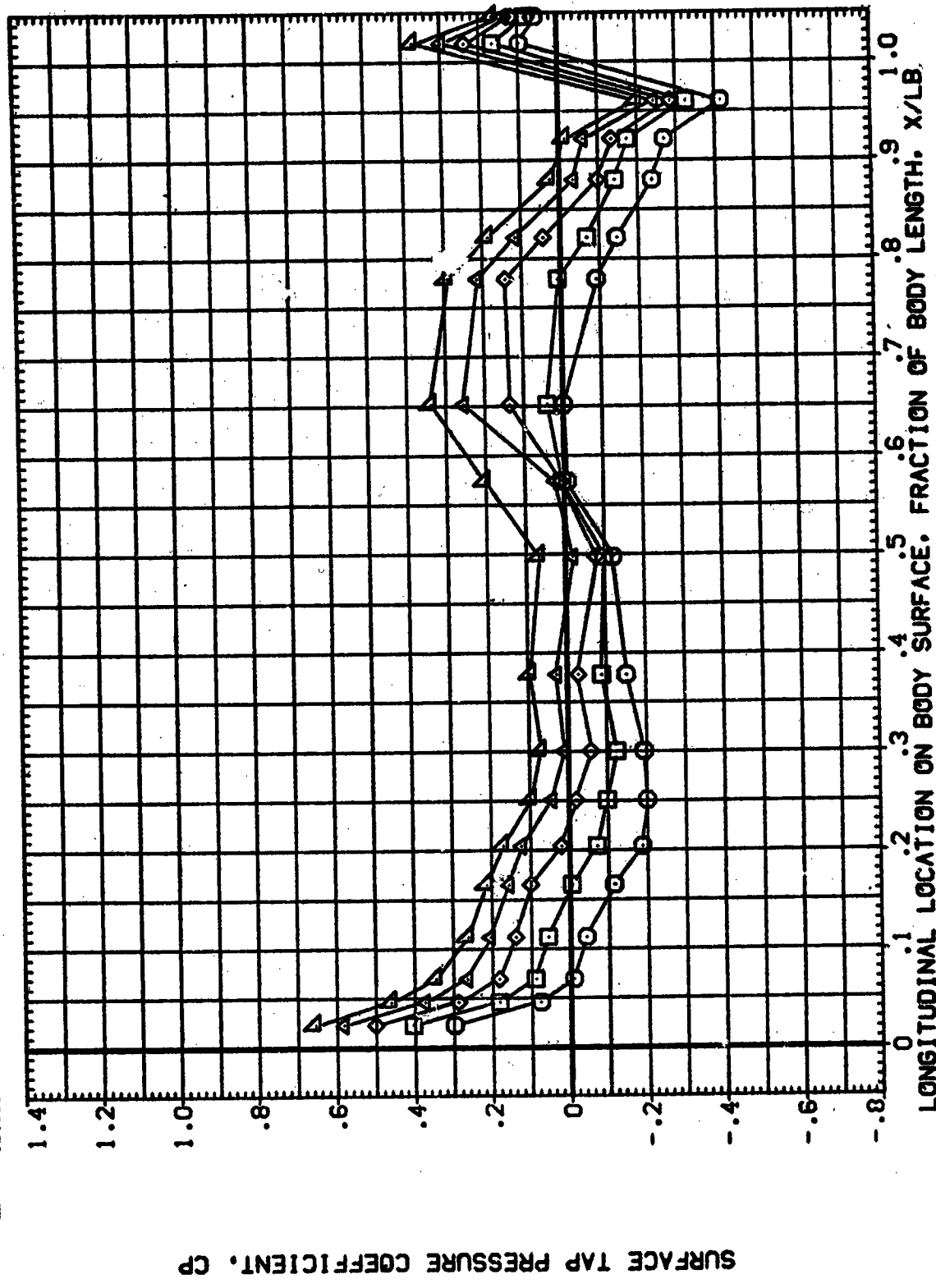


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B03)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 90.000
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 55.000
 BODYFLAP 16.300 L-ELVN .000
 R-ELVN .000 HACH 1.100

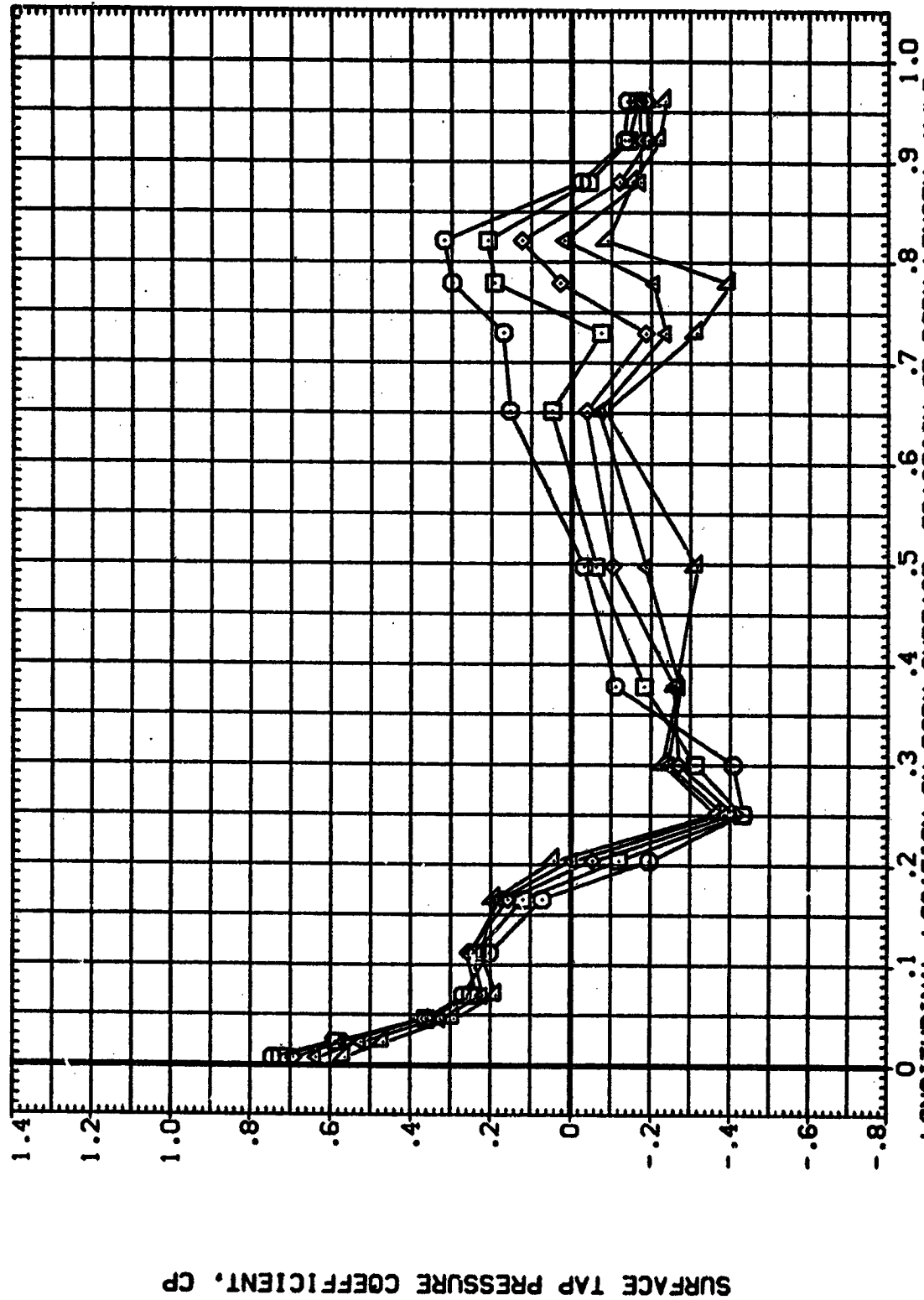


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8803)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRX .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

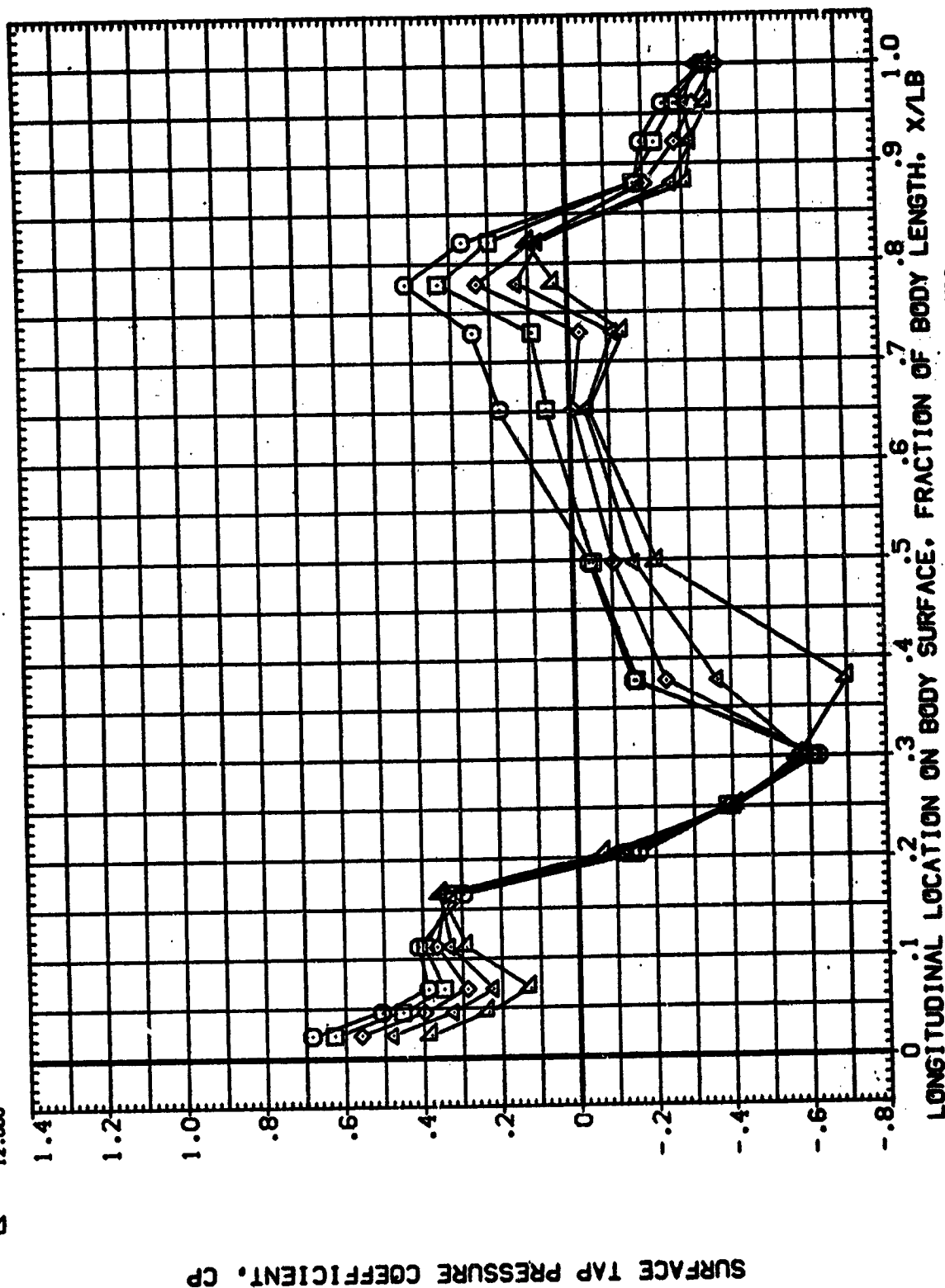


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 150.000
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

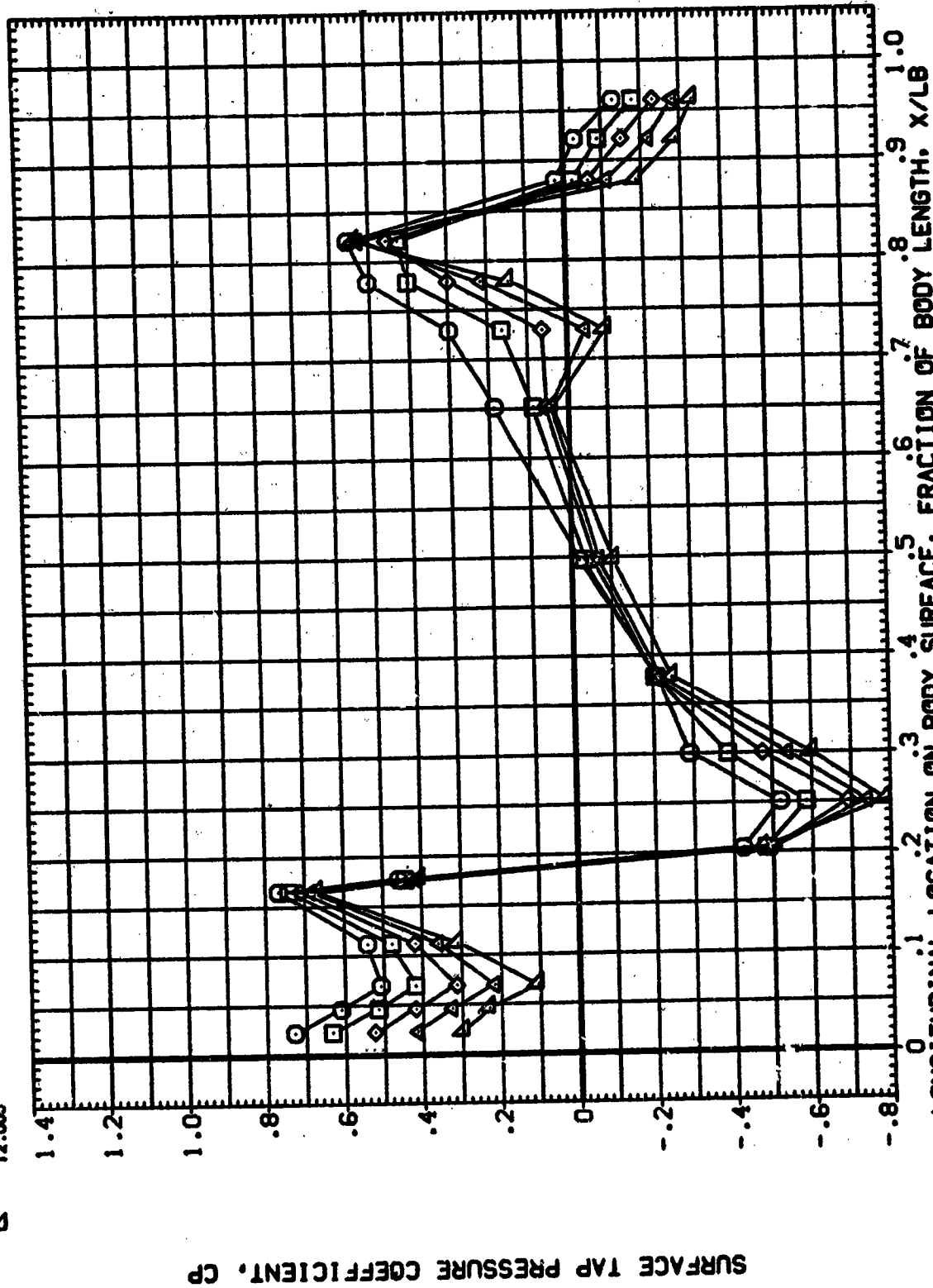


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

(1E8B03)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

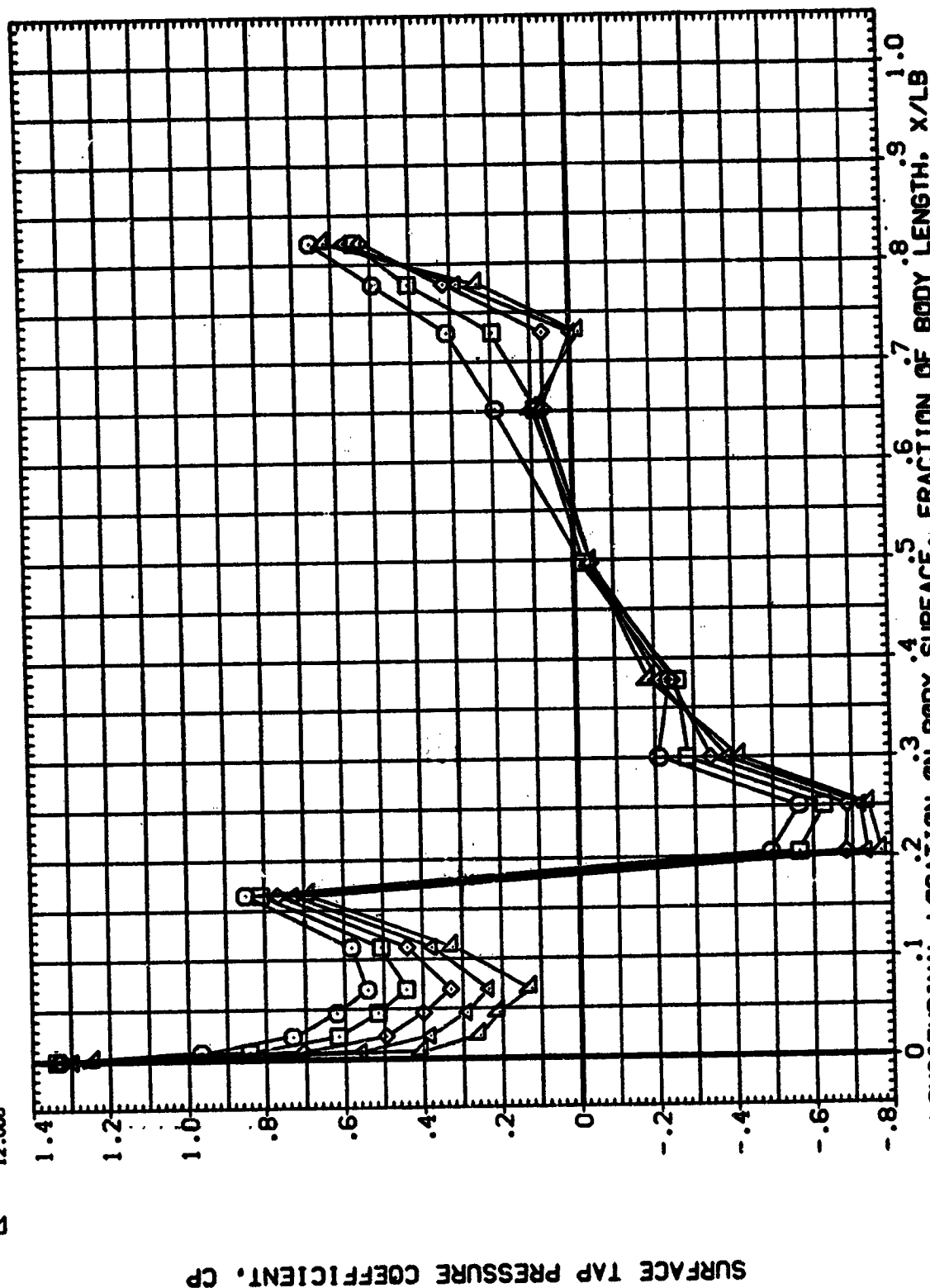
SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000
 .000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 35.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B03)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI .000
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBY 55.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

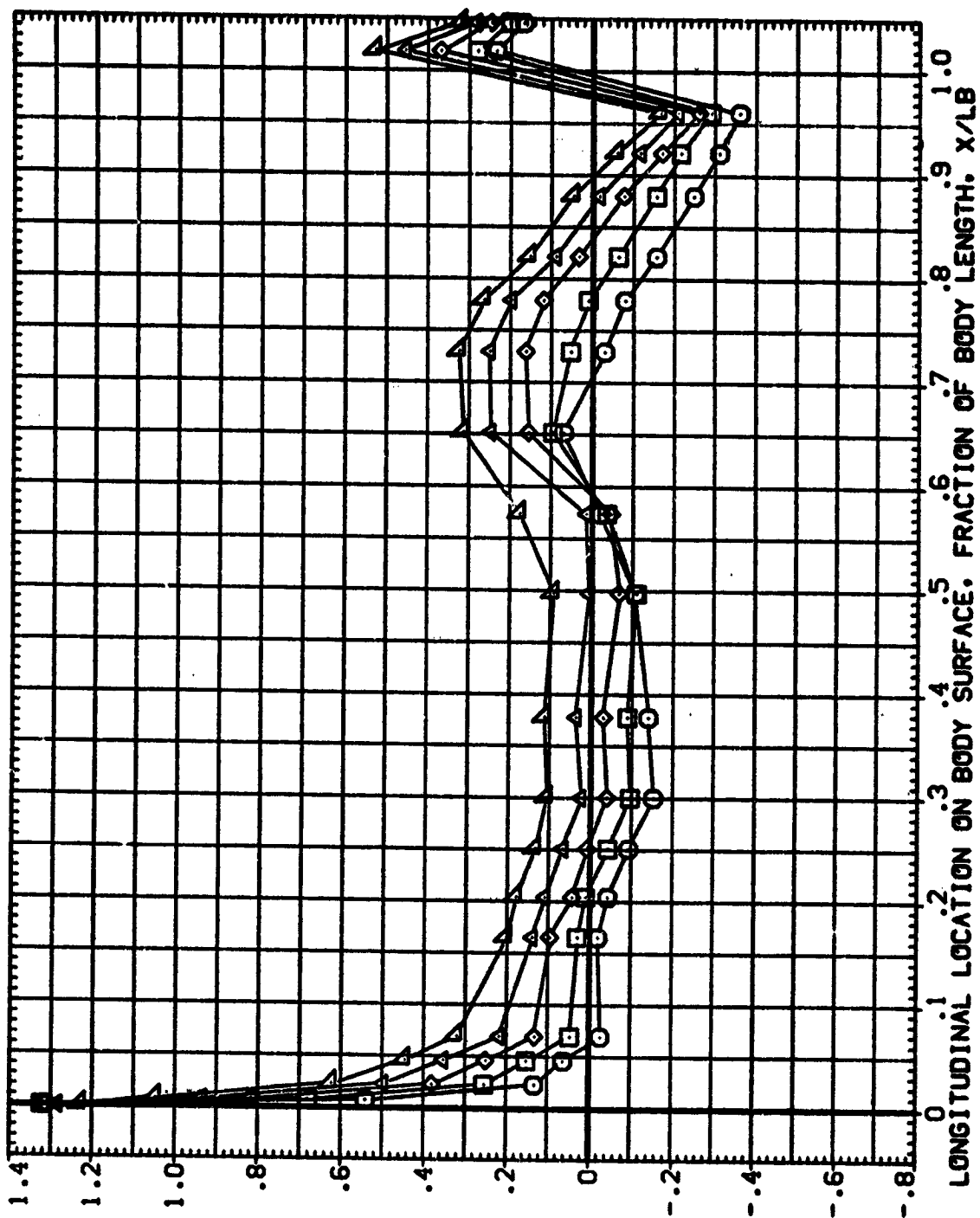


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL	ALPHA	PHI	BETA		PARAMETRIC VALUES		
○	-4.000	40.000	4.000	RUDDER	.000	SPDRBK	55.000
□	.000			BOFLAP	16.300	L-ELVN	.000
◇	4.000			R-ELVN	.000	MACH	1.100
△	8.000						
▽	12.000						

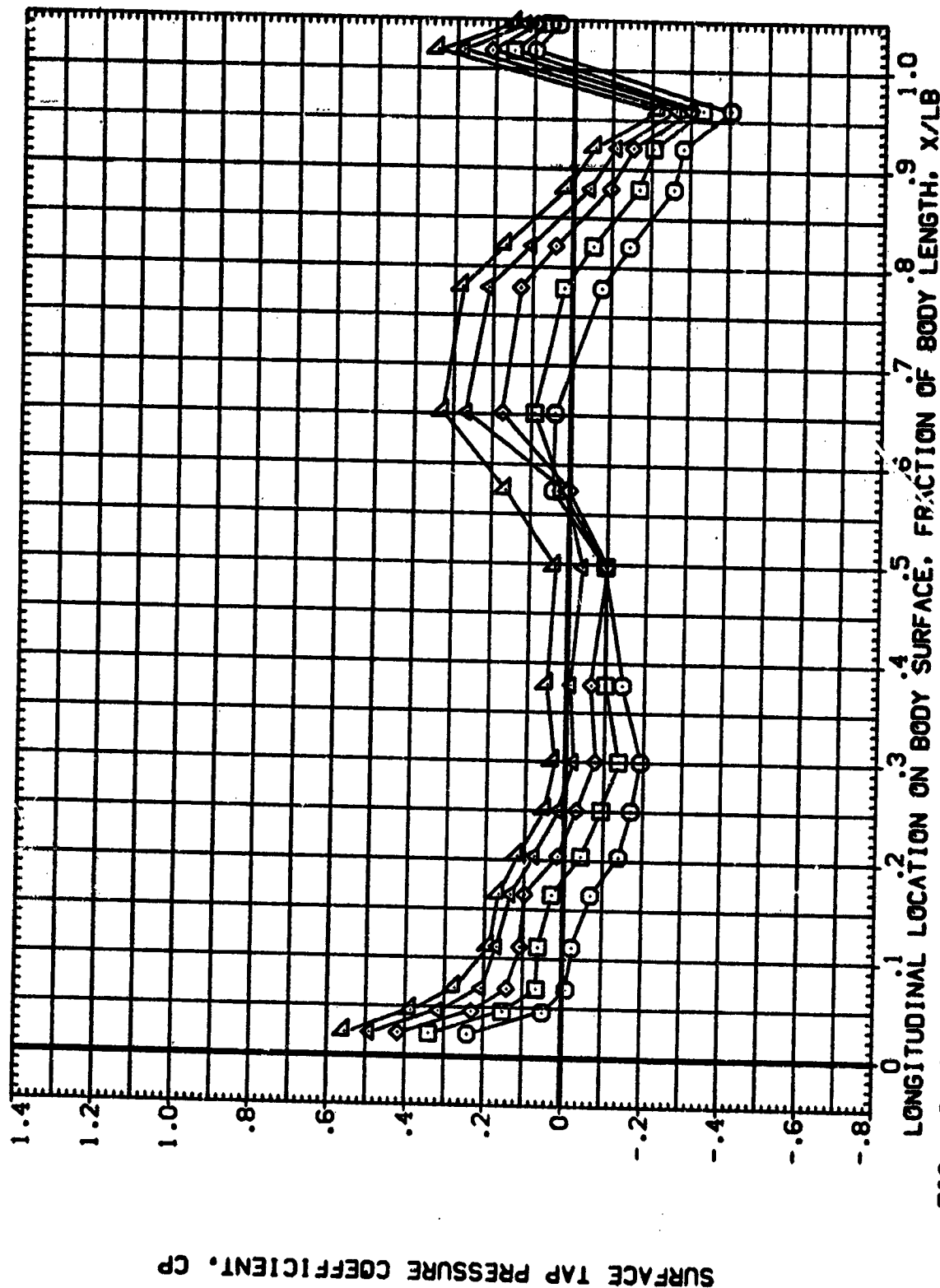


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B03)

SYMBOL
 ▽
 ◇
 □
 ◊
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 90.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPURRY 99.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

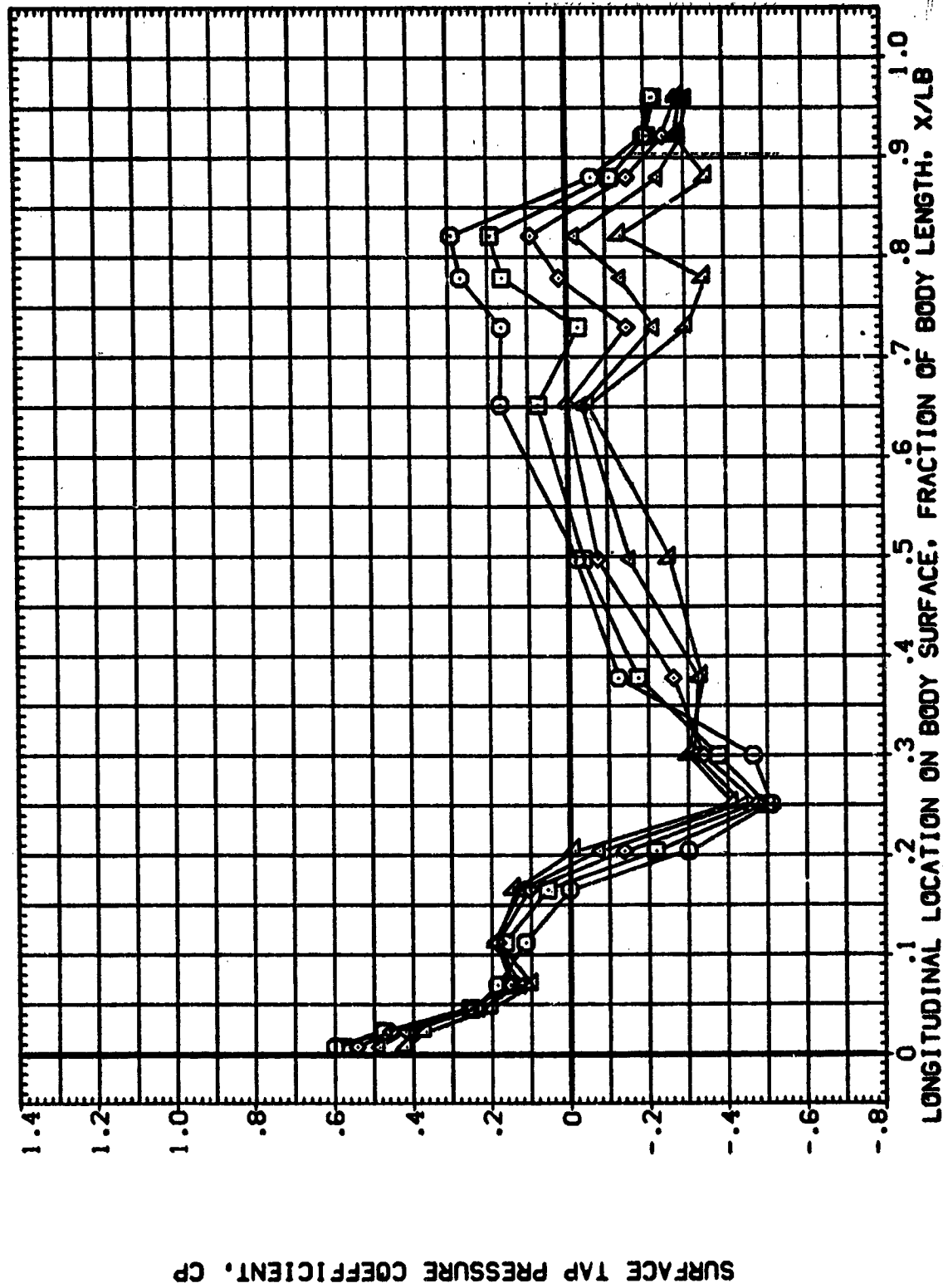


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
▽
◇
□
○

ALPHA
-4.000
-4.000
4.000
8.000
12.000

PHI
120.000

BETA
4.000

PARAMETRIC VALUES
RUDDER
BOFLAP
R-ELVN

55.000
.000
16.300
.000
MACH
1.100

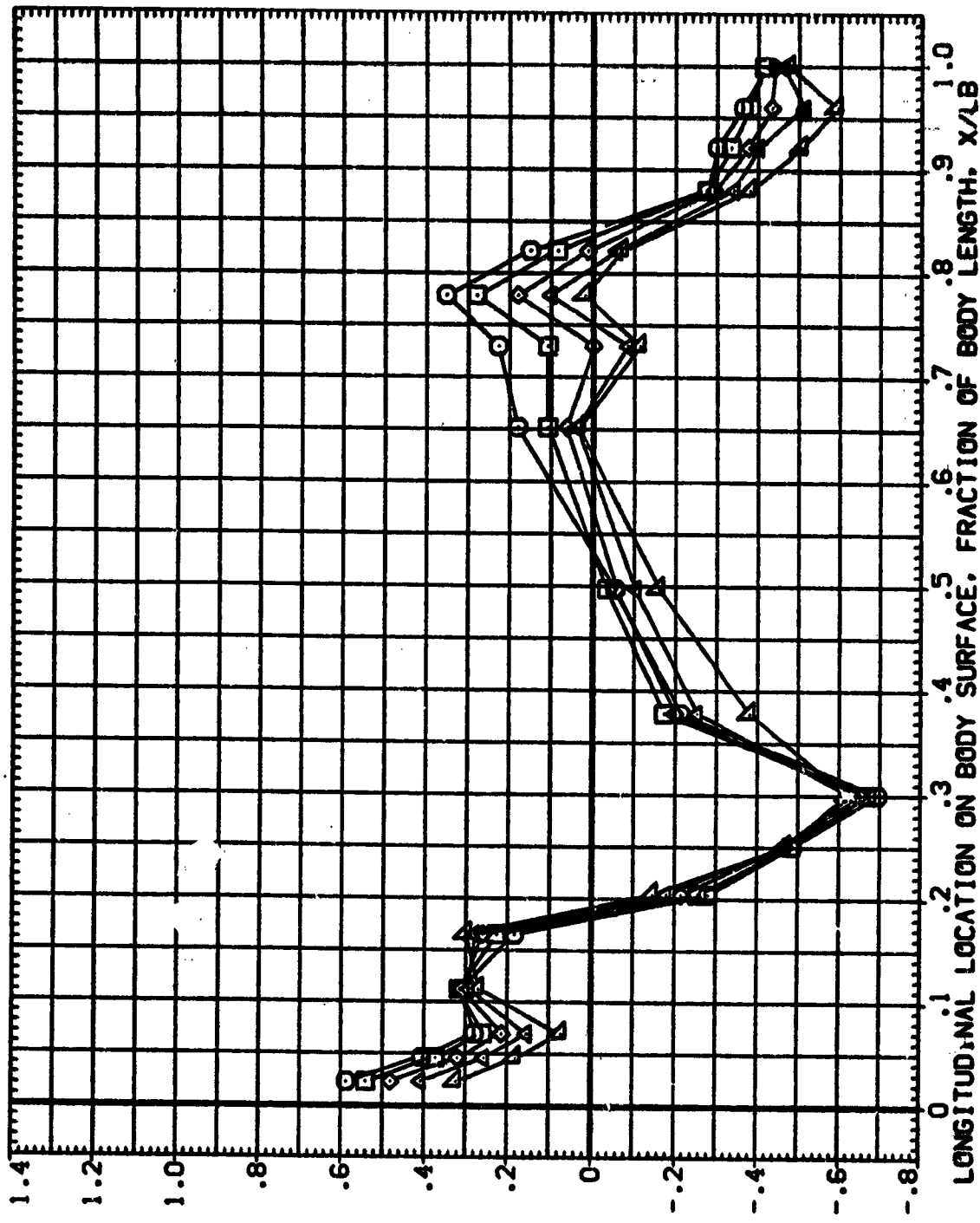


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8803)

SYMBOL	ALPHA		PHI		BETA		PARAMETRIC VALUES			
	-4.000	4.000	150.000	4.000			RUDER	BOFLAP	R-ELVN	
▽	-4.000	4.000	150.000	4.000				16.300	.000	55.000
◇	4.000	8.000						.000	L-ELVN	.000
□	8.000	12.000						.000	MACH	1.100

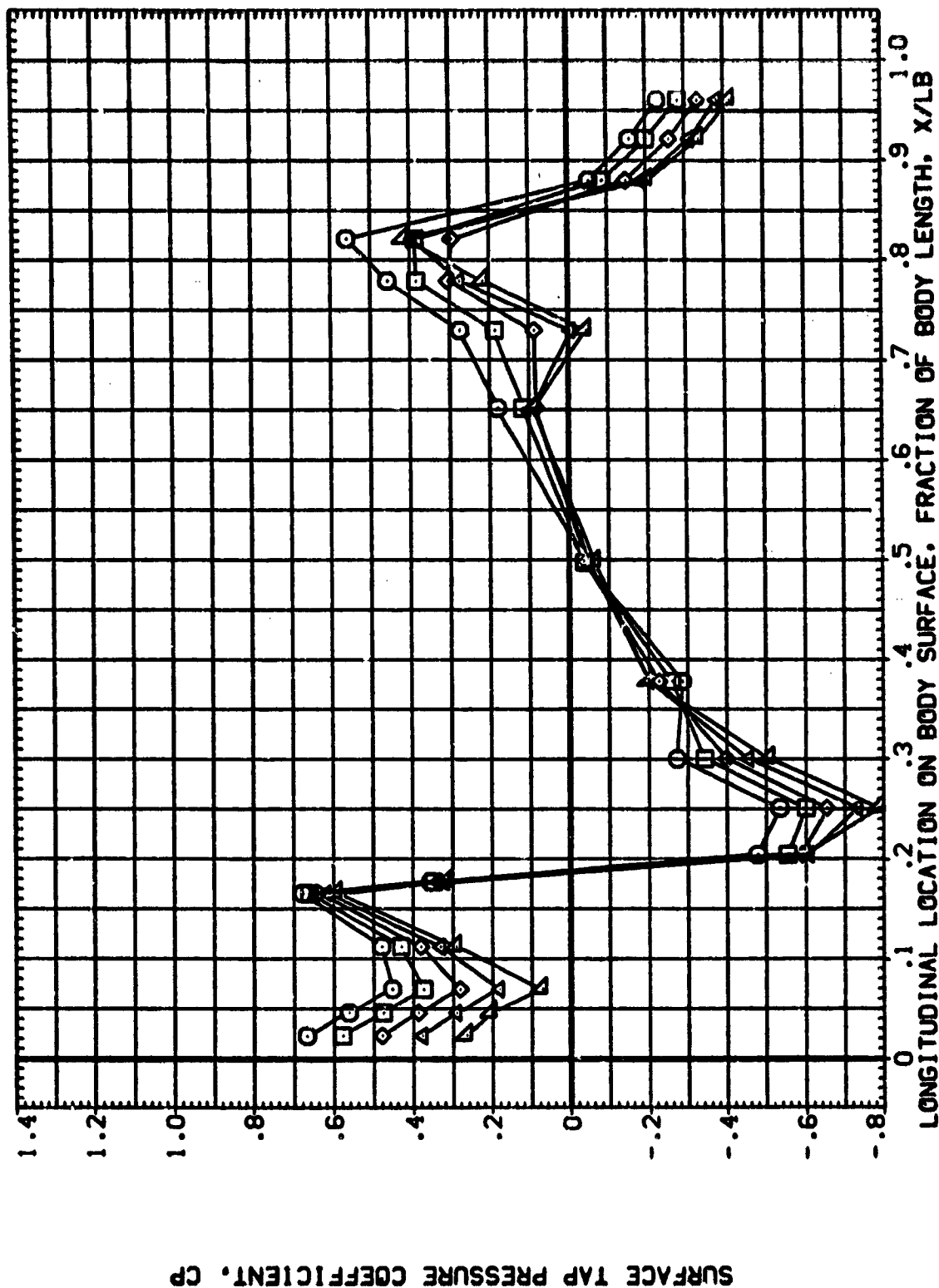


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
○	-4.000	180.000	4.000	RUDDER .000 SPDBRK .000
□	.000			BOFLAP :6.300 L-ELVN .000
◇	4.000			R-ELVN .000 HACH 1.100
△	8.000			
▽	12.000			

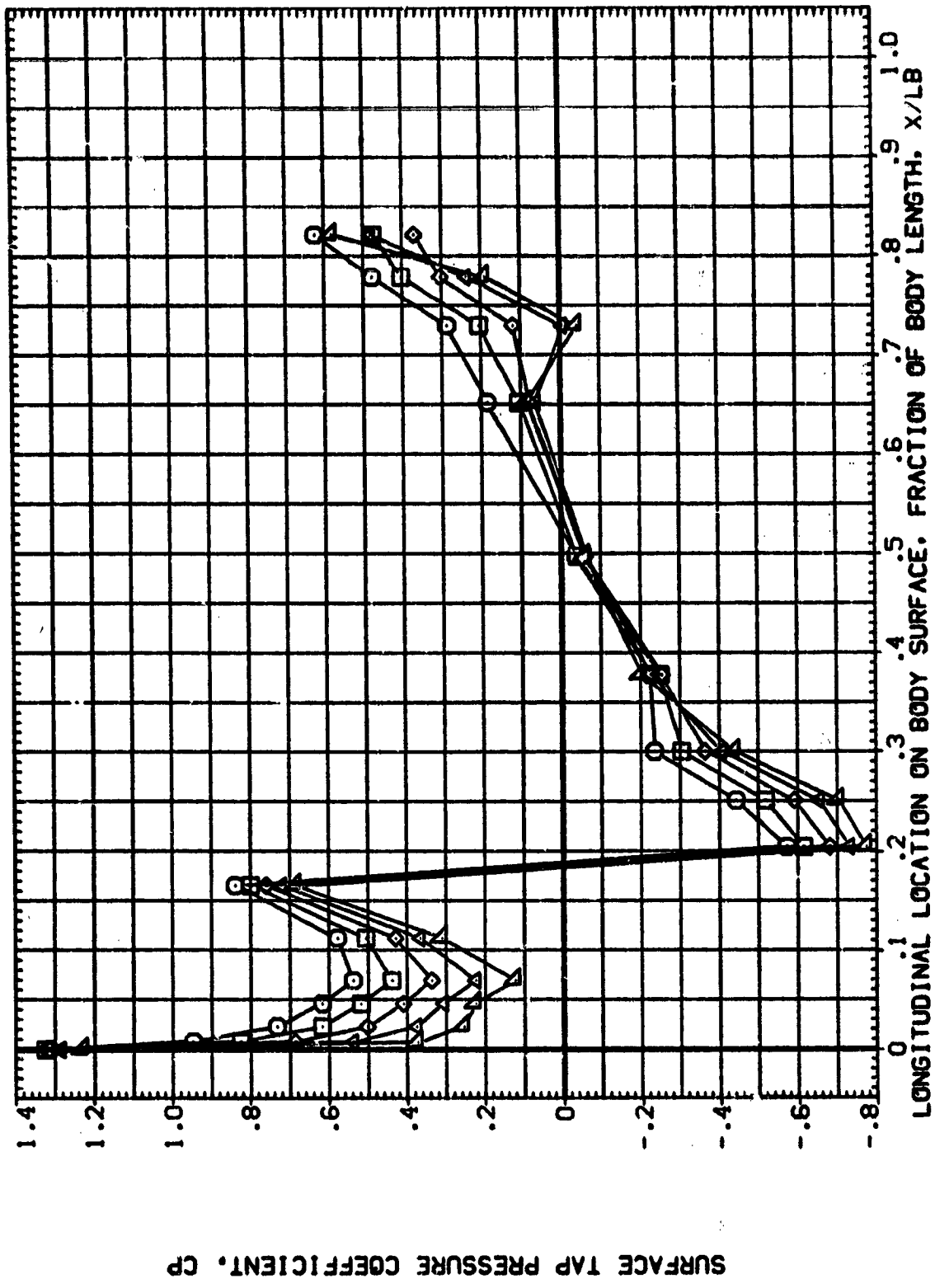


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

11

6

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI .000

BETA -4.000

PARAMETRIC VALUES
RUDDER .000
80FLAP 16.30C
R-ELVN .000

SPDRBK .000
L-ELVN .000
MACH 1.250

SS.000
.000
1.250

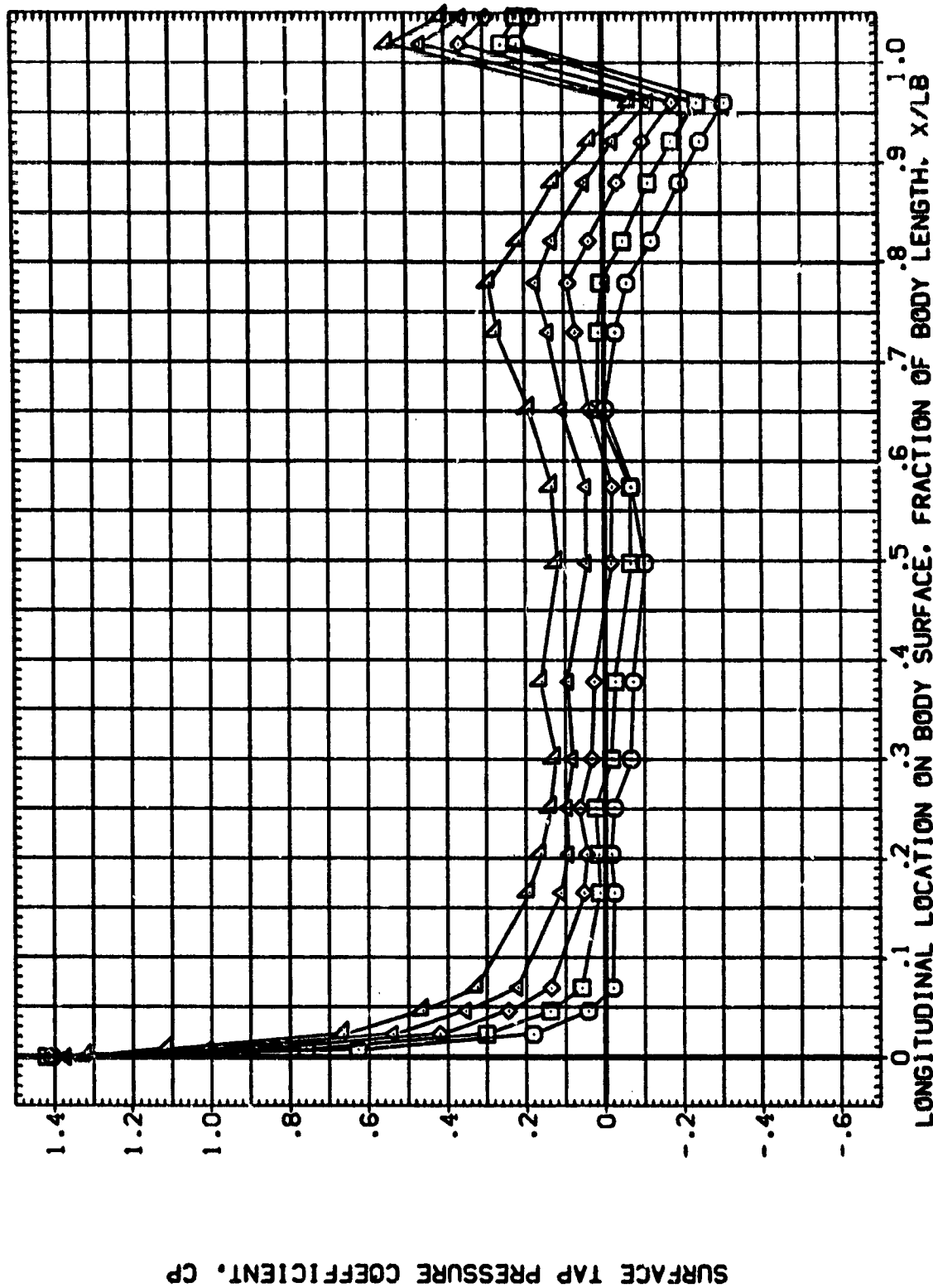


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 -4.000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

SPDRBK
 L-ELVN
 MACH
 55.000
 .000
 1.250

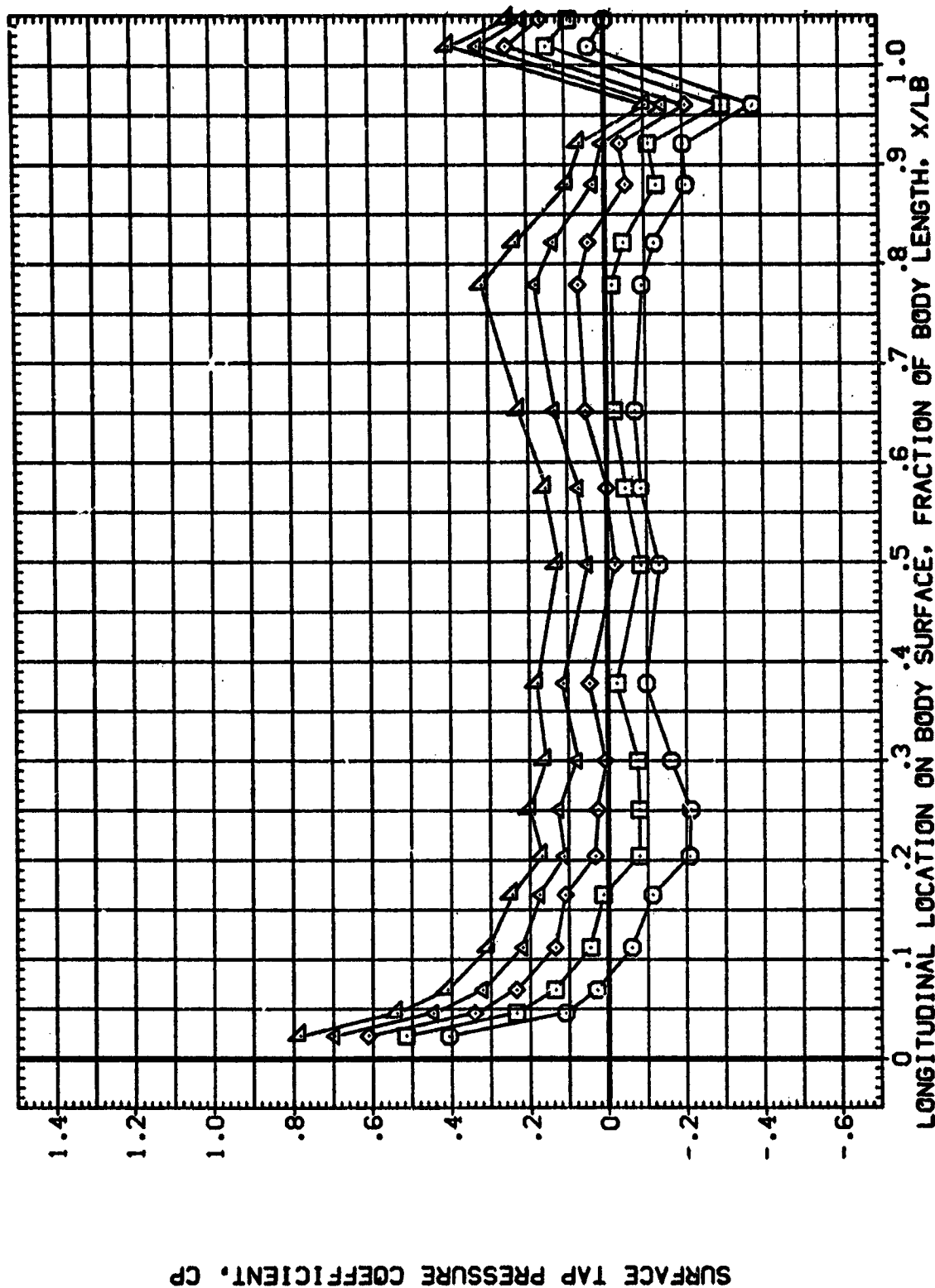


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 90.000
 BETA -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK .55.000
 BOXFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

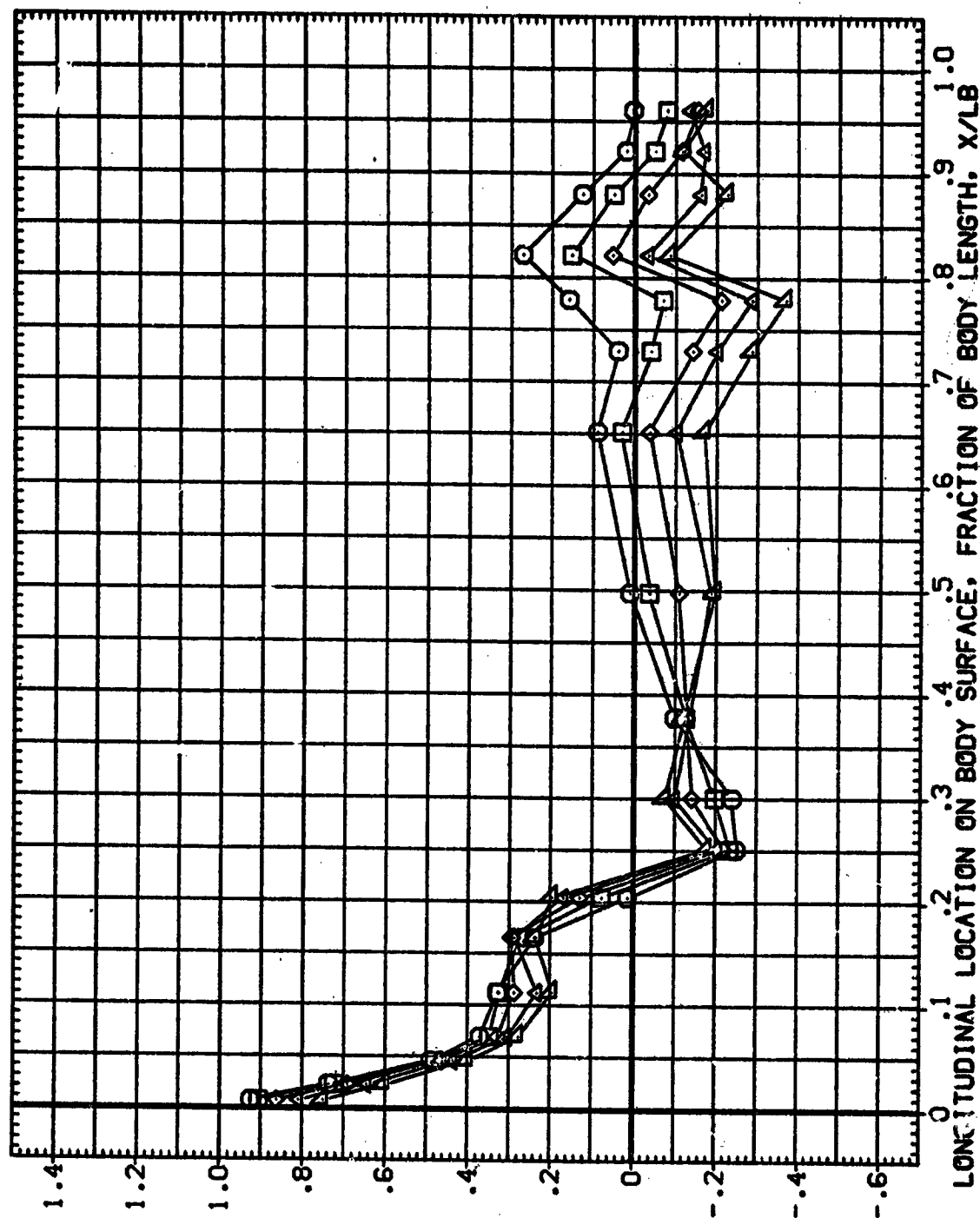


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPURRY .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 NACH 1.250

55.000
 .000
 1.250

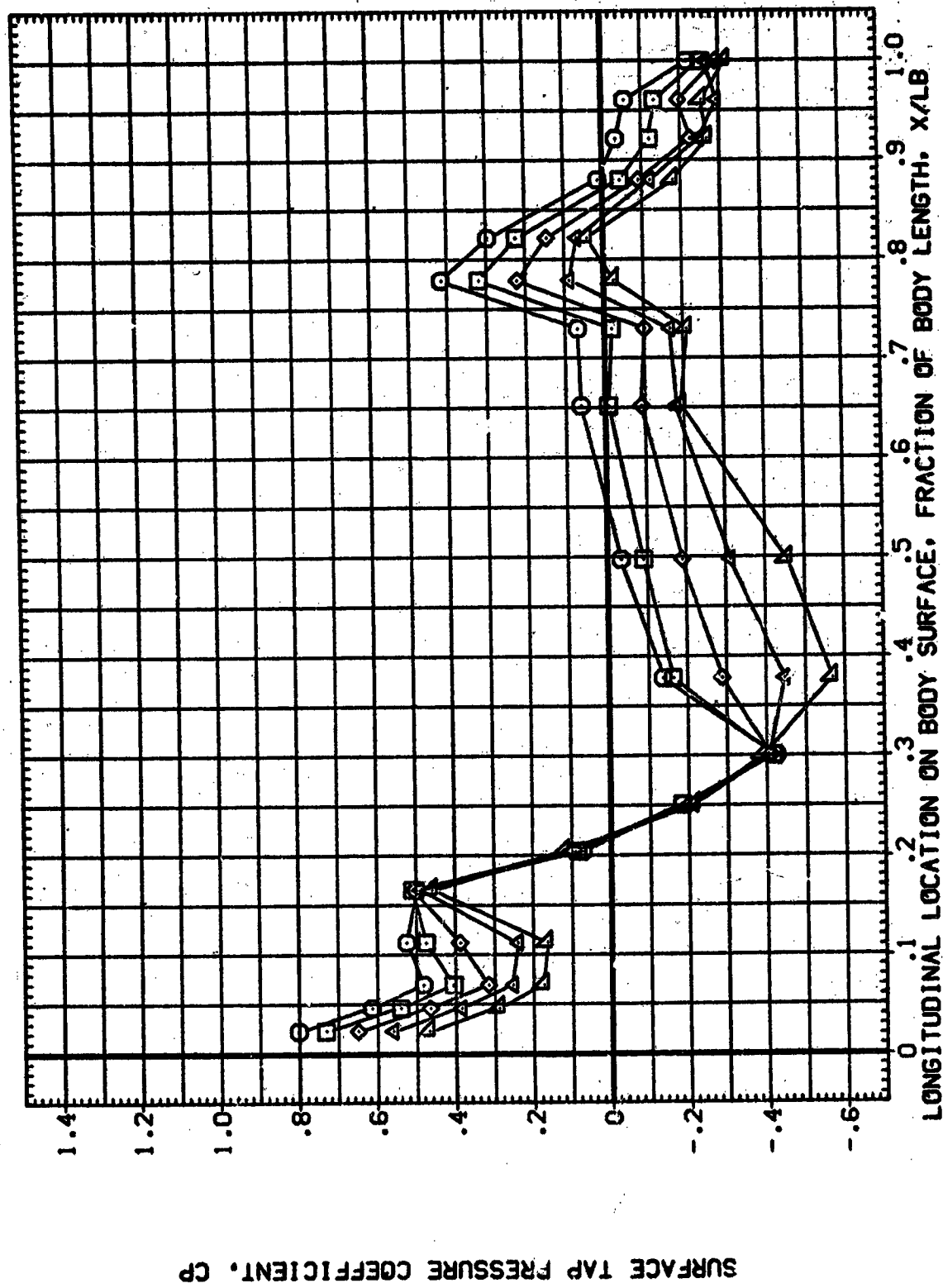


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
 ▽
 ◊
 □
 ○

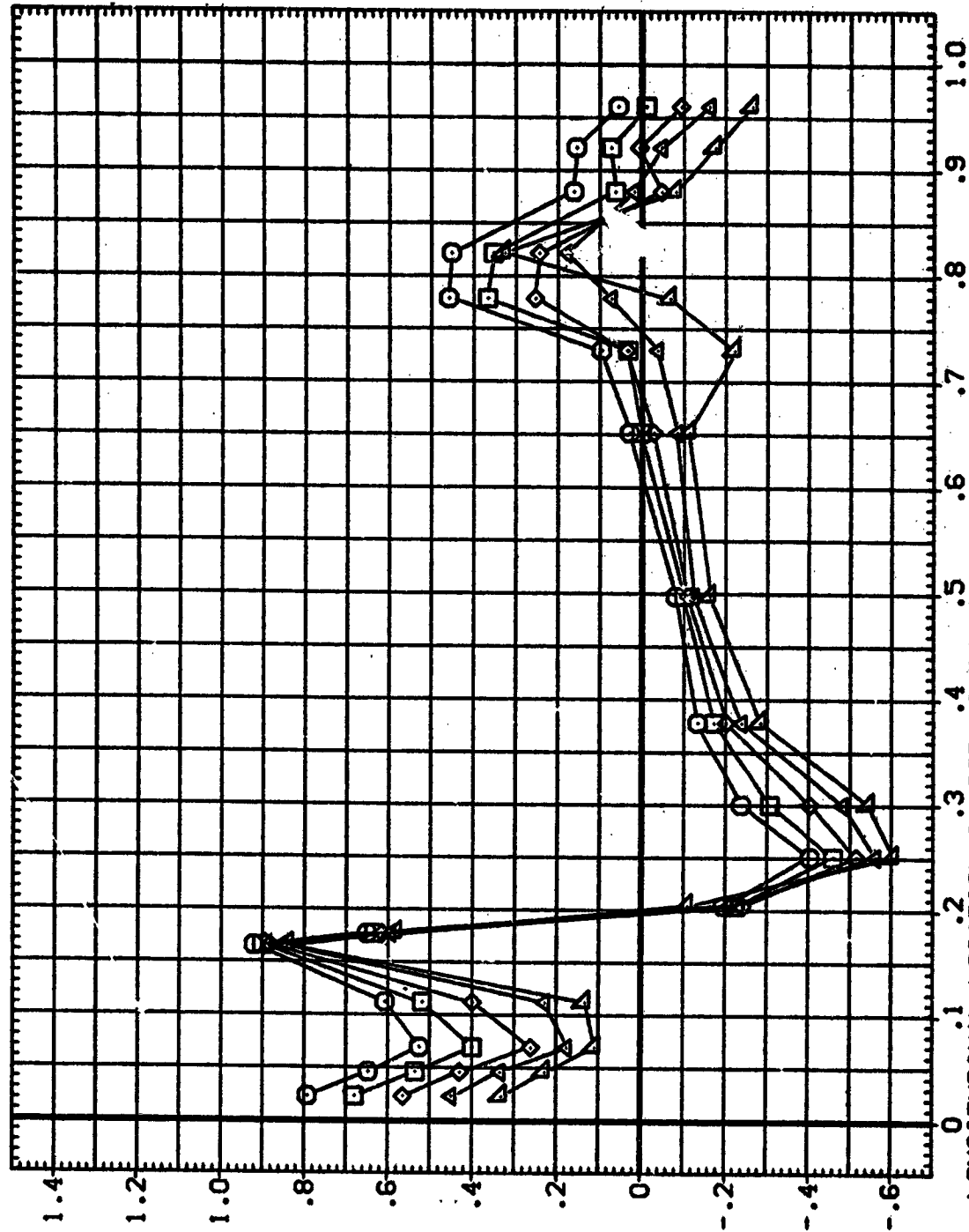
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 150.000

BETA -4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP 16.300
 R-ELVN .000

SPDRK 55.000
 L-ELVN .000
 MACH 1.250



LONGITUDINAL LOCATION ON BODY SURFACE, FRACTION OF BODY LENGTH, X/LB

FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
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 ○

ALPHA -4.000
 PHI 180.000
 BETA -4.000

PARAMETRIC VALUES
 RUDDER .000
 SPOBRN .000
 SDFLAP 16.300
 R-ELVN .000
 L-ELVN .000
 MACH 1.250

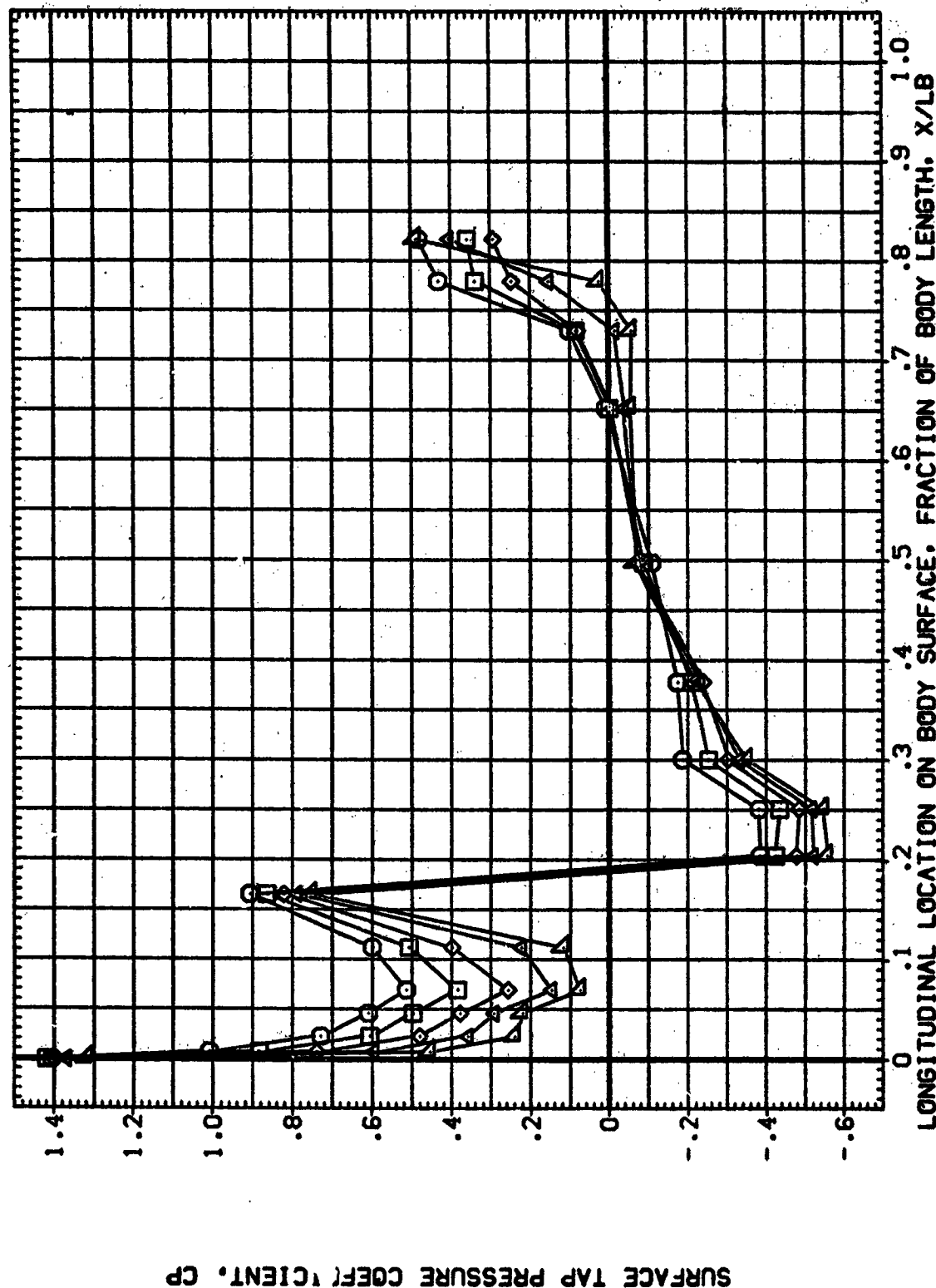


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
 ▽
 ◇
 □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI .000
 BETA .000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP 16.300
 R-ELVN .000
 SPDRK 55.000
 L-ELVN .000
 MACH 1.250

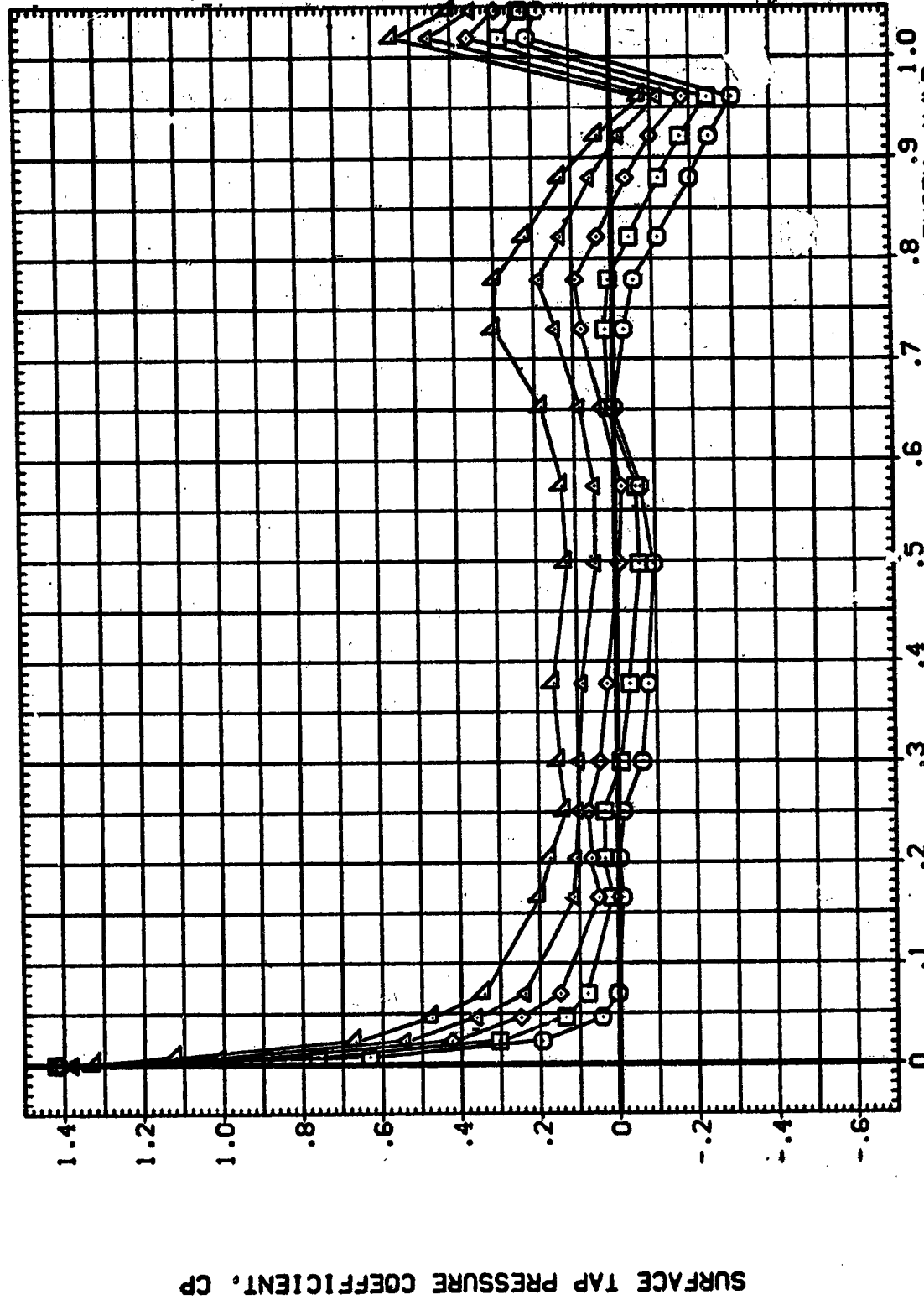


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
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ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 .000

RUDDER
 BD-FLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

SPDRMK
 L-ELVN
 MACH

55.000
 .000
 1.250

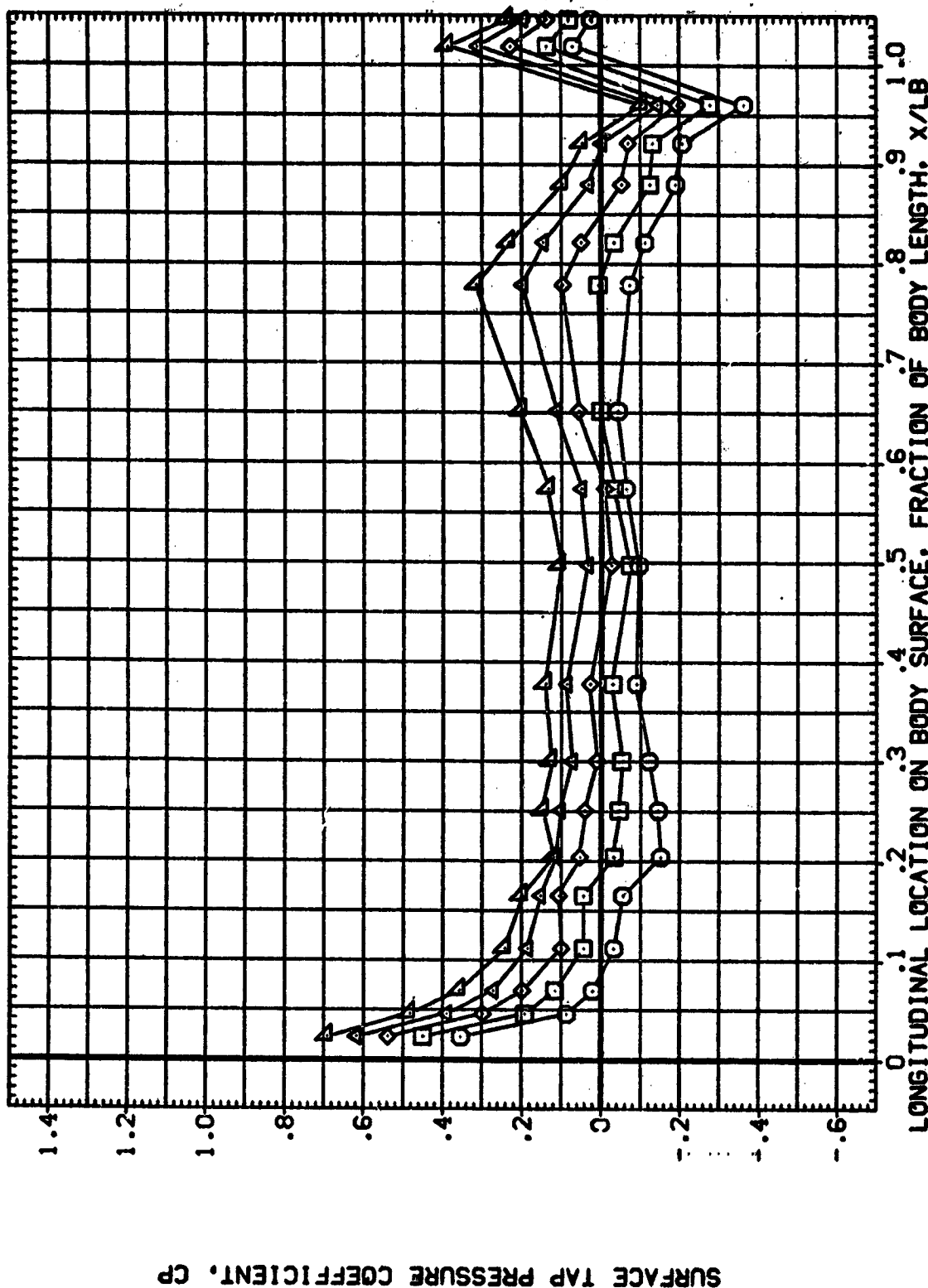


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
 ▽ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 90.000

BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 95.000
 EOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

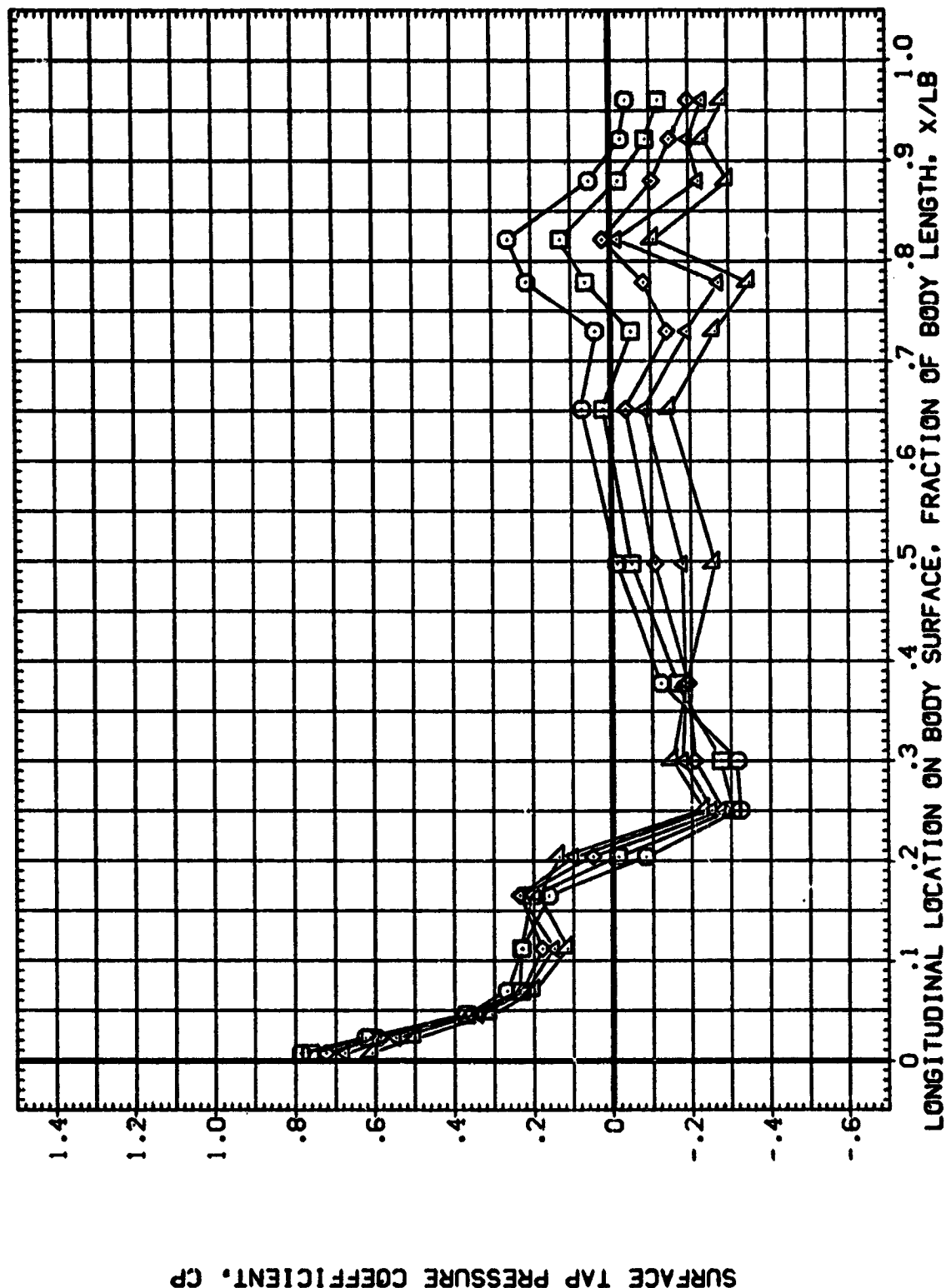


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPOSRK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

SYMBOL ALPHA PHI BETA
 ▽ -4.000 120.000 .000
 ◇ .000
 ◻ 4.000
 ◻ 8.000
 ◻ 12.000

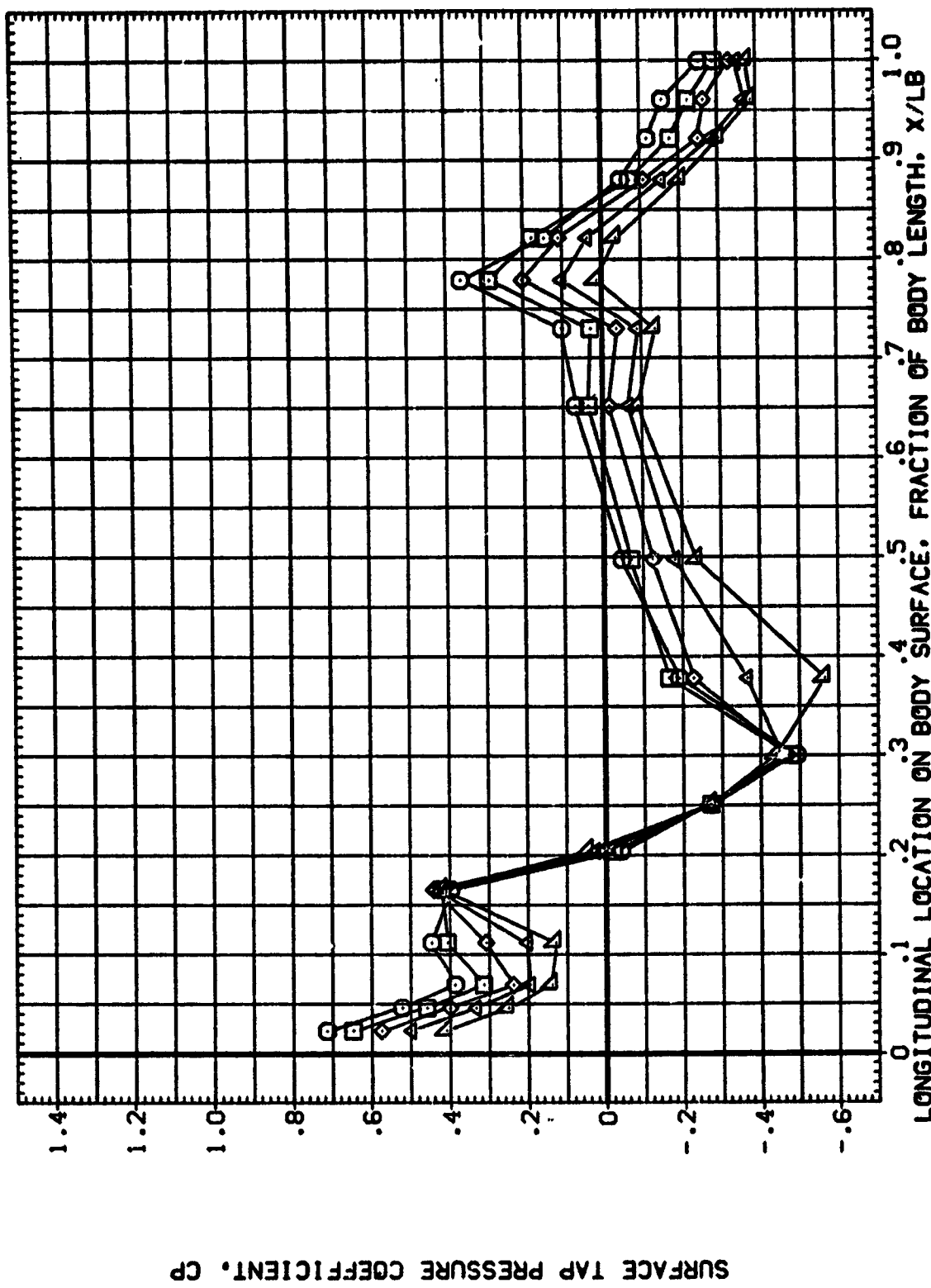


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
 ▽ ◆ □ ○

ALPHA PHI BETA
 -4.000 150.000 .000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

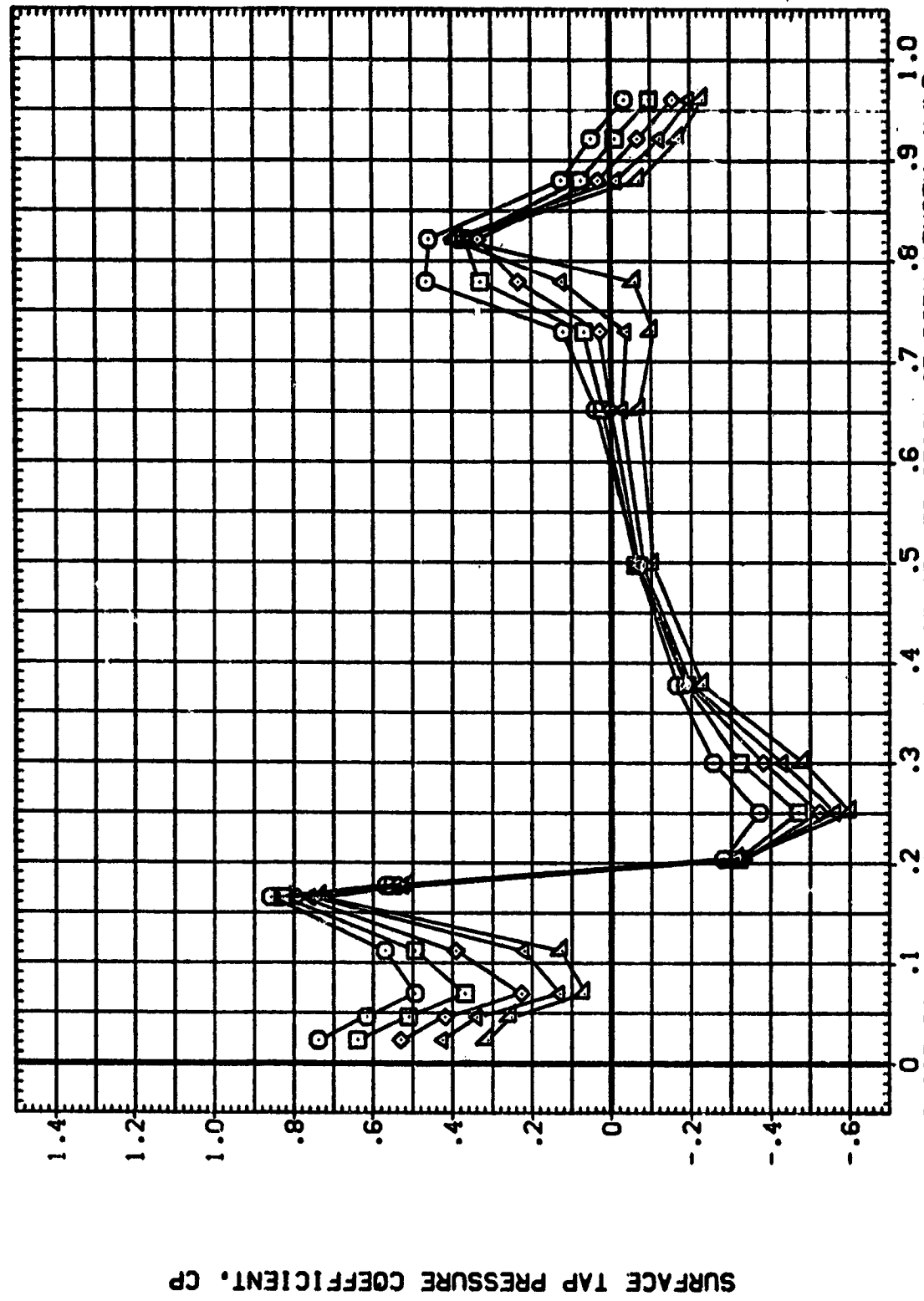


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ○ □ ◇ △

ALPHA -4.000
 .000
 4.000
 8.000
 12.000

PHI 180.000
 .000

BETA .000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP 16.300
 R-ELVN .000

SPDRNK 55.000
 L-ELVN .000
 MACH 1.250

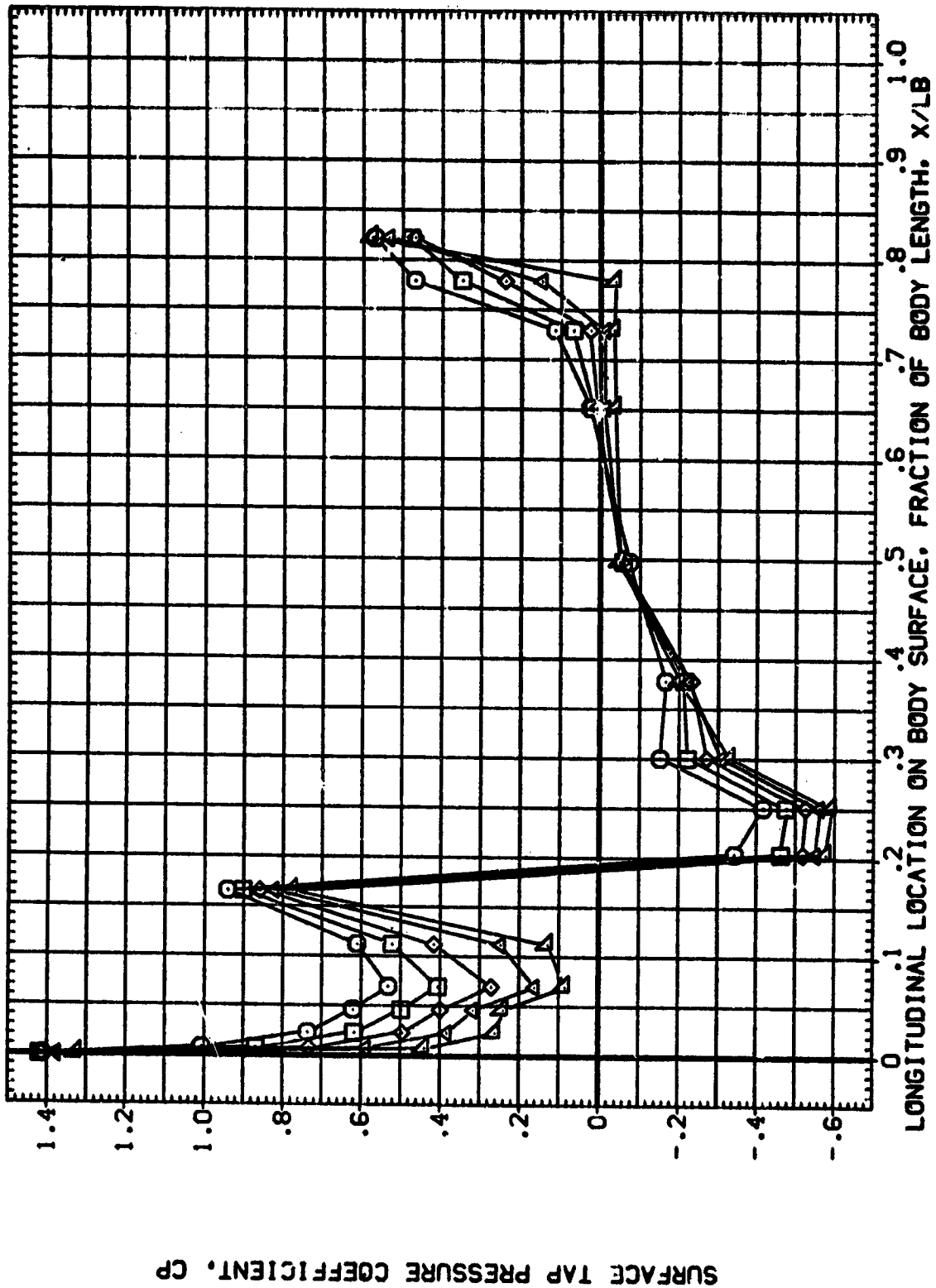


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
 ▽
 ◇
 □
 ○
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI .000
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 55.000
 BOFLAP 16.300 .000
 R-ELVN .000 1.250

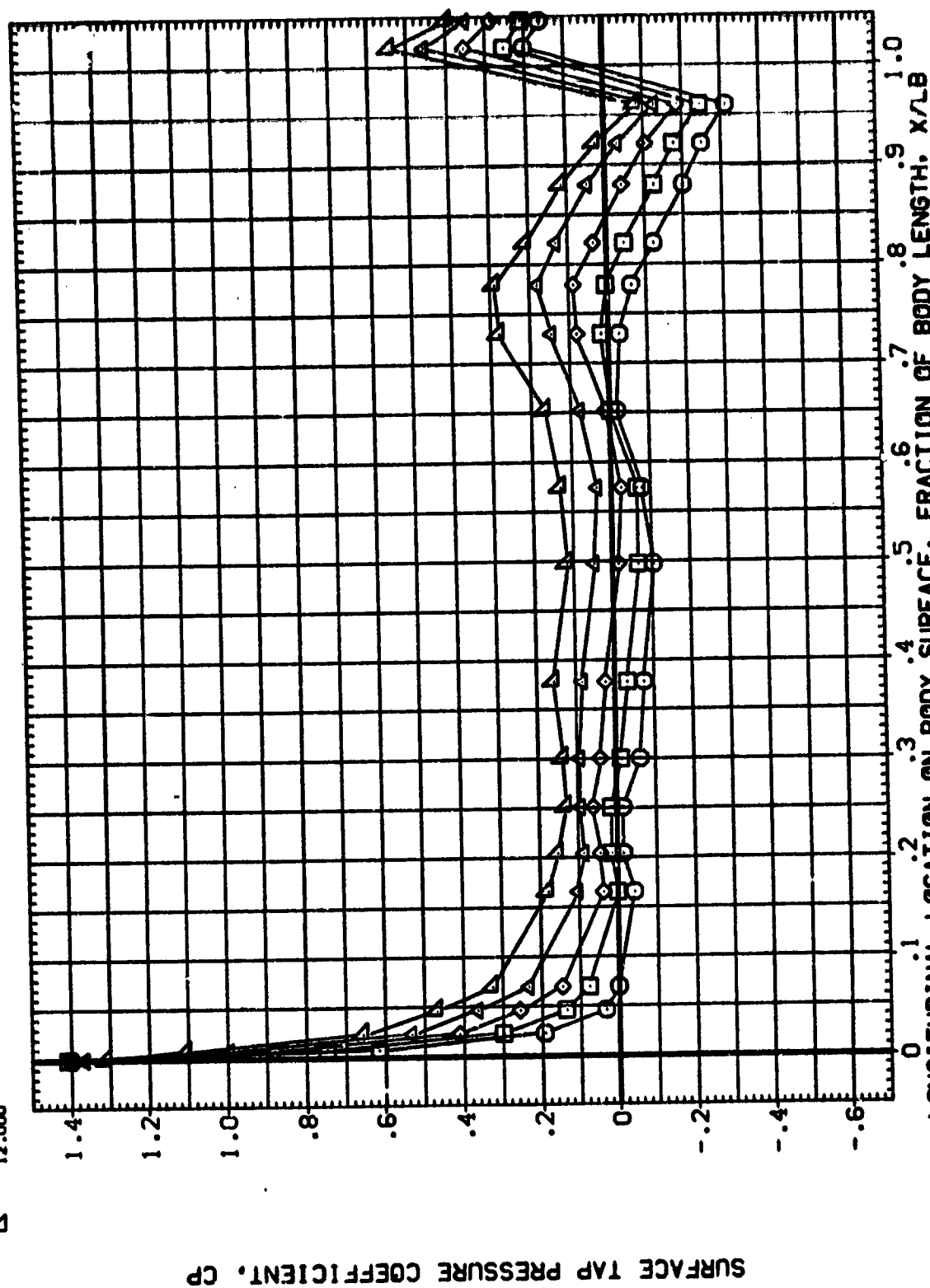


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 40.000

BETA
 4.000

PARAMETRIC VALUES

RUDDER .000 SPDRNK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

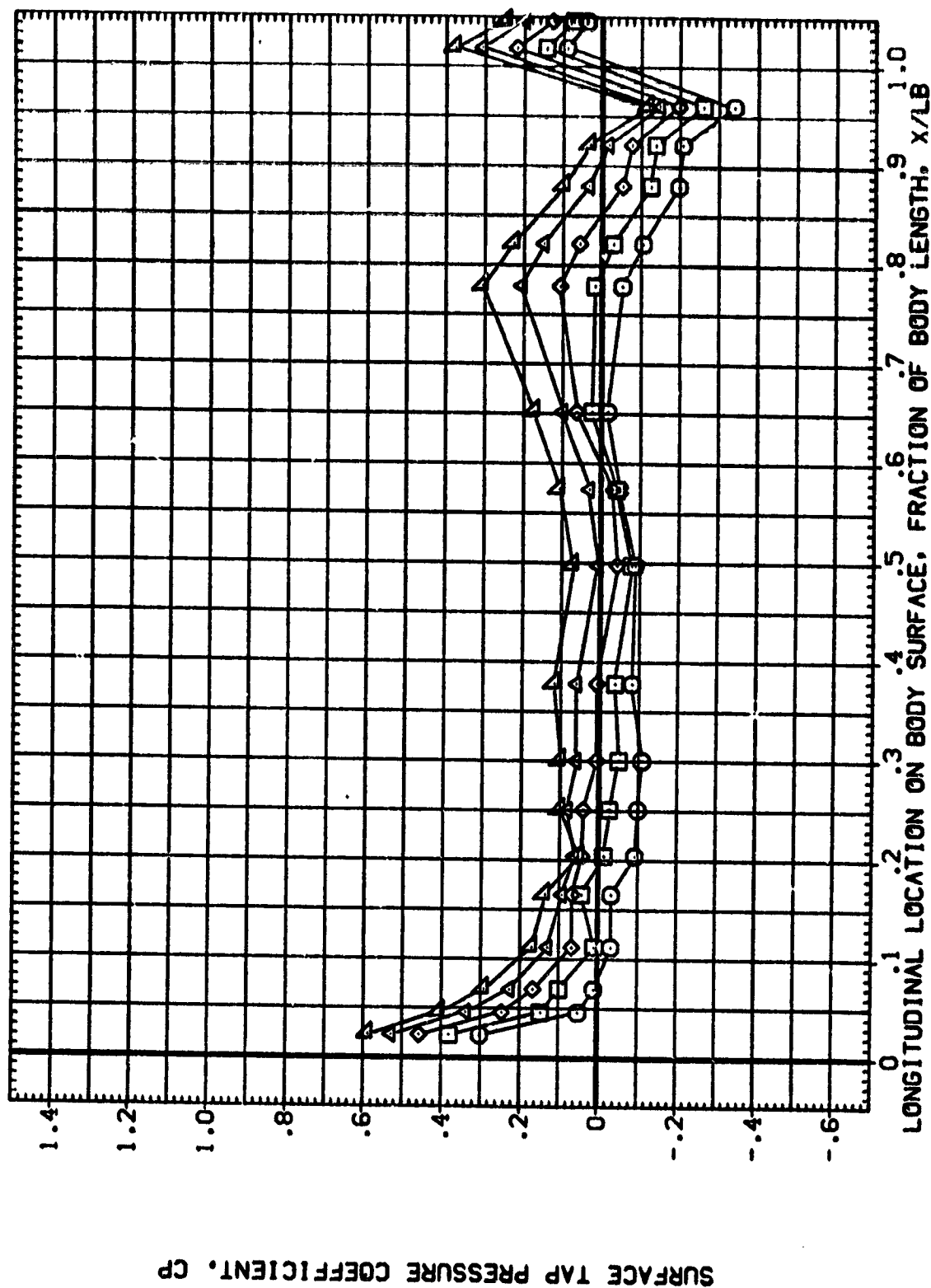


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B02)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

PHI 90.000
BETA 4.000

PARAMETRIC VALUES

RUDDER .000 SPDRX 55.000
BUFLAP 16.300 L-ELVN .000
R-ELVN .000 MACH 1.230

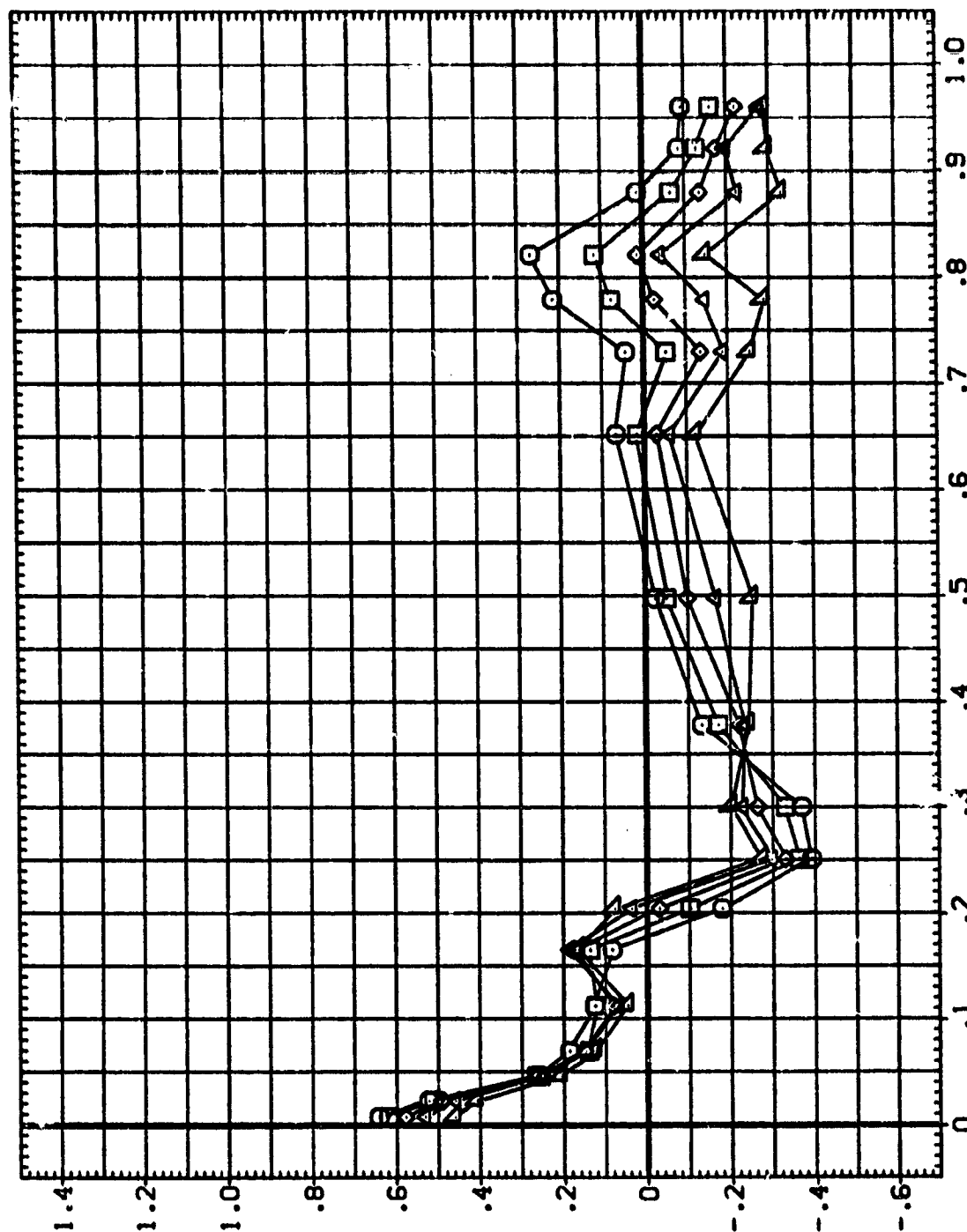


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
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ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 120.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

SURFACE TAP PRESSURE COEFFICIENT, CP

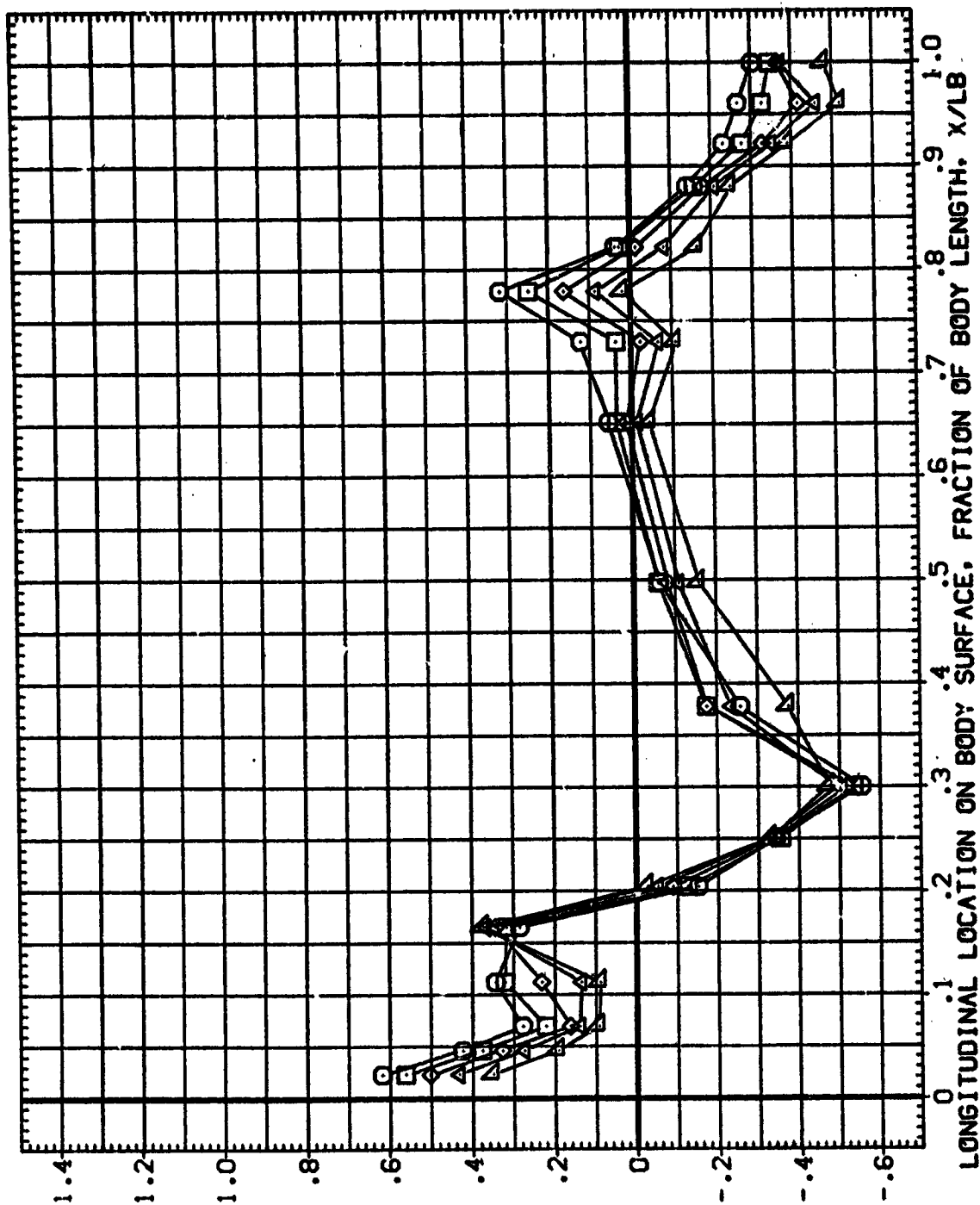


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

(1E8B02)

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI 150.000
 BETA 4.000

RUDDER
 90FLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPOBRK 55.000
 16.300 L-ELVN .000
 .000 MACH 1.250

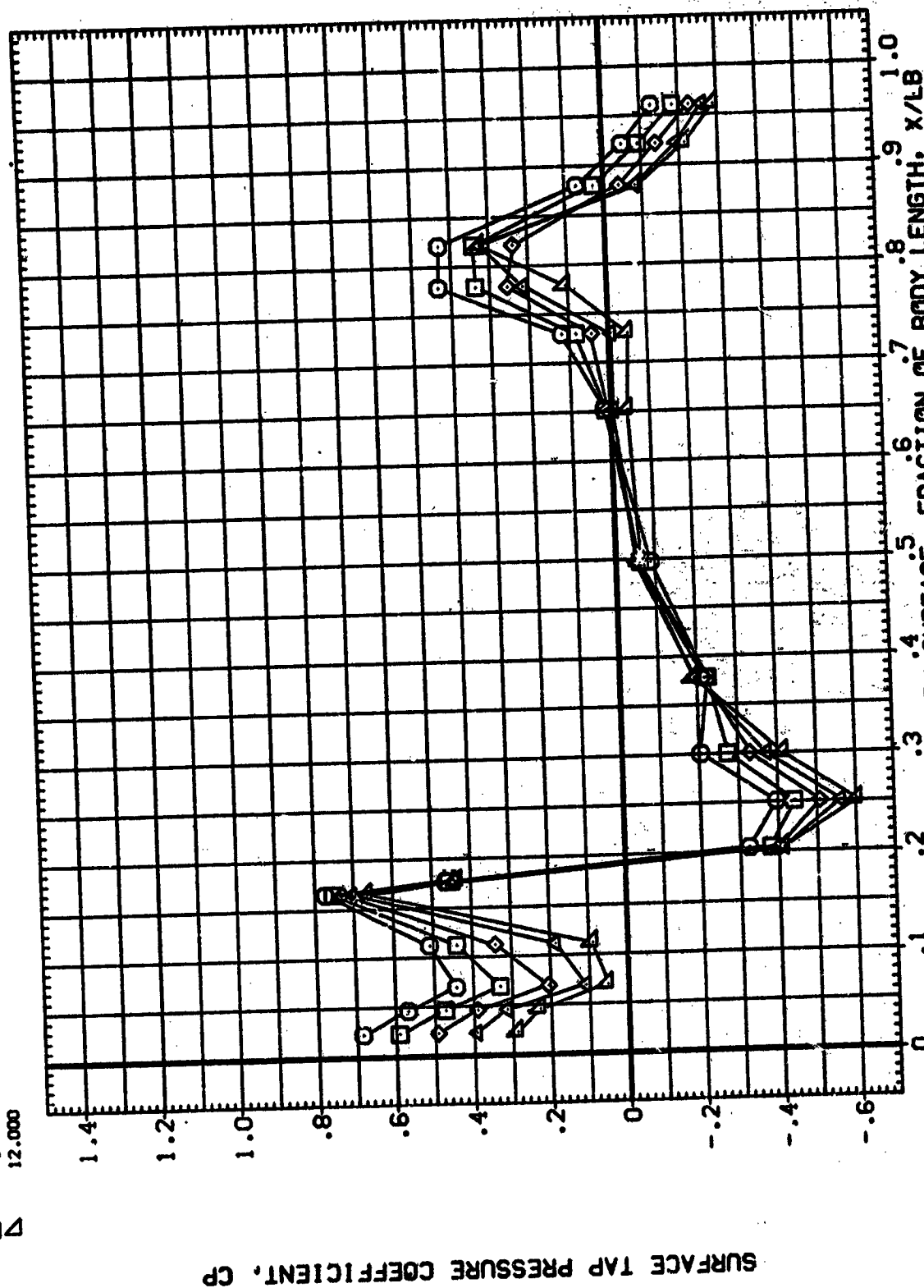


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ○
 □
 ◇
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ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

PHI
 180.000
 4.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN
 .000
 16.300
 .000

SPDRK
 L-ELVN
 MACH
 .000
 .000
 1.250

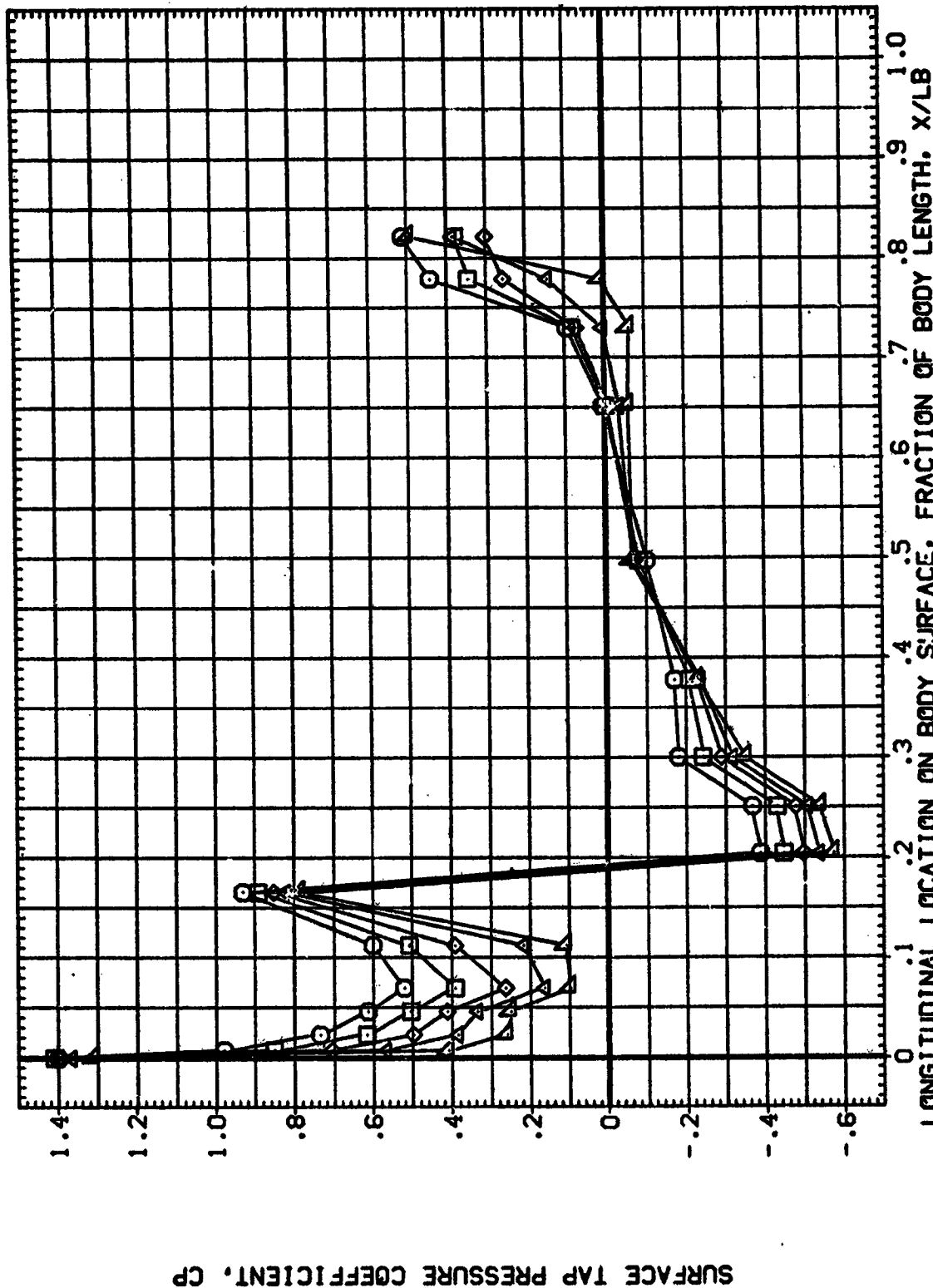


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

PARAMETRIC VALUES
 RUDDER .000 SPDRK .000 SS.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA .000 BETA -4.000
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ▽ ◆ ◇ ▽

SURFACE TAP PRESSURE COEFFICIENT, CP

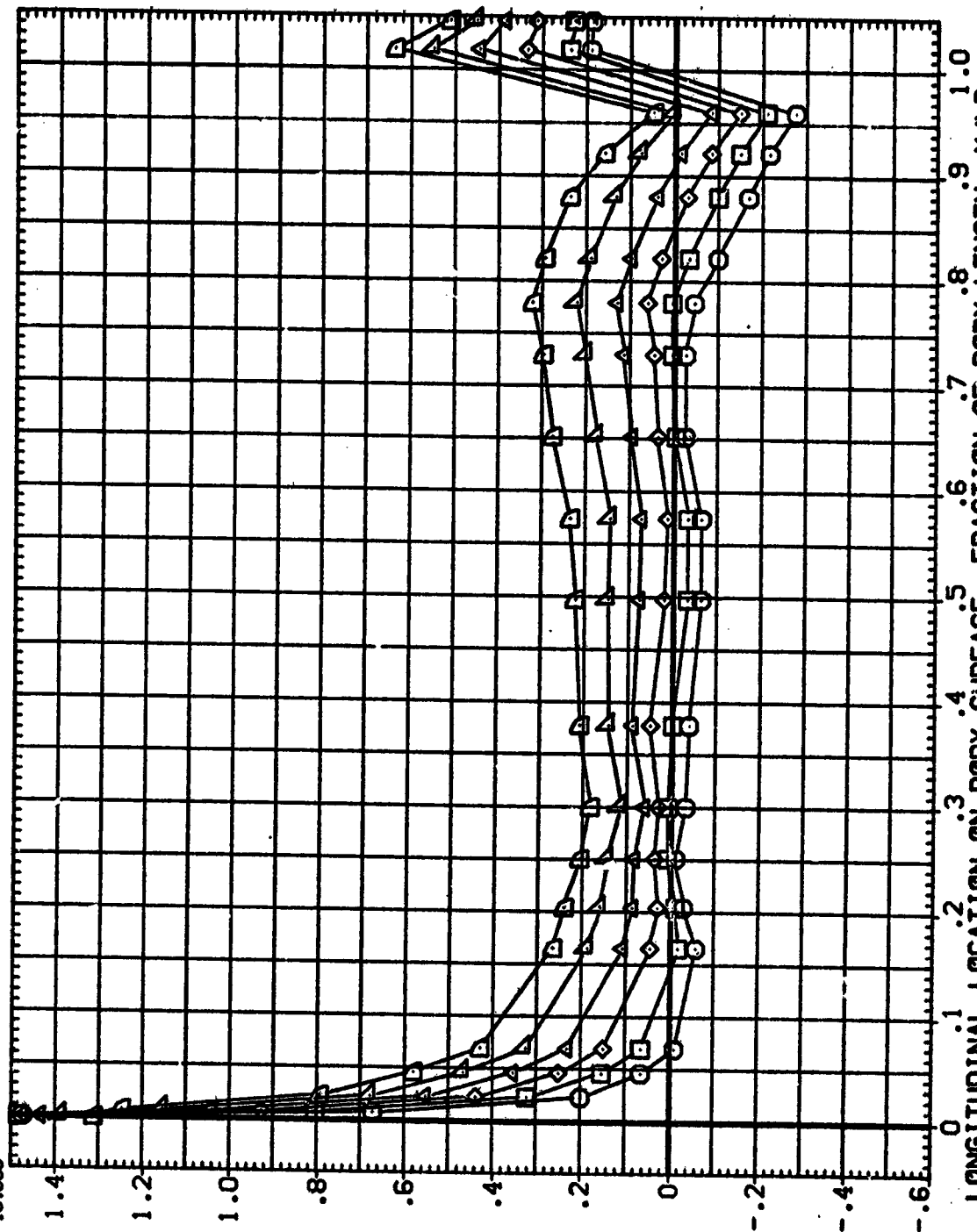


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◊
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 ◻
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

PHI
 40.000

BETA
 -4.000

PARAMETRIC VALUES

RUDDER
 BOFLAP
 R-ELVN

SPDRBK
 L-ELVN
 MACH

55.000
 .000
 .000
 .000
 1.400

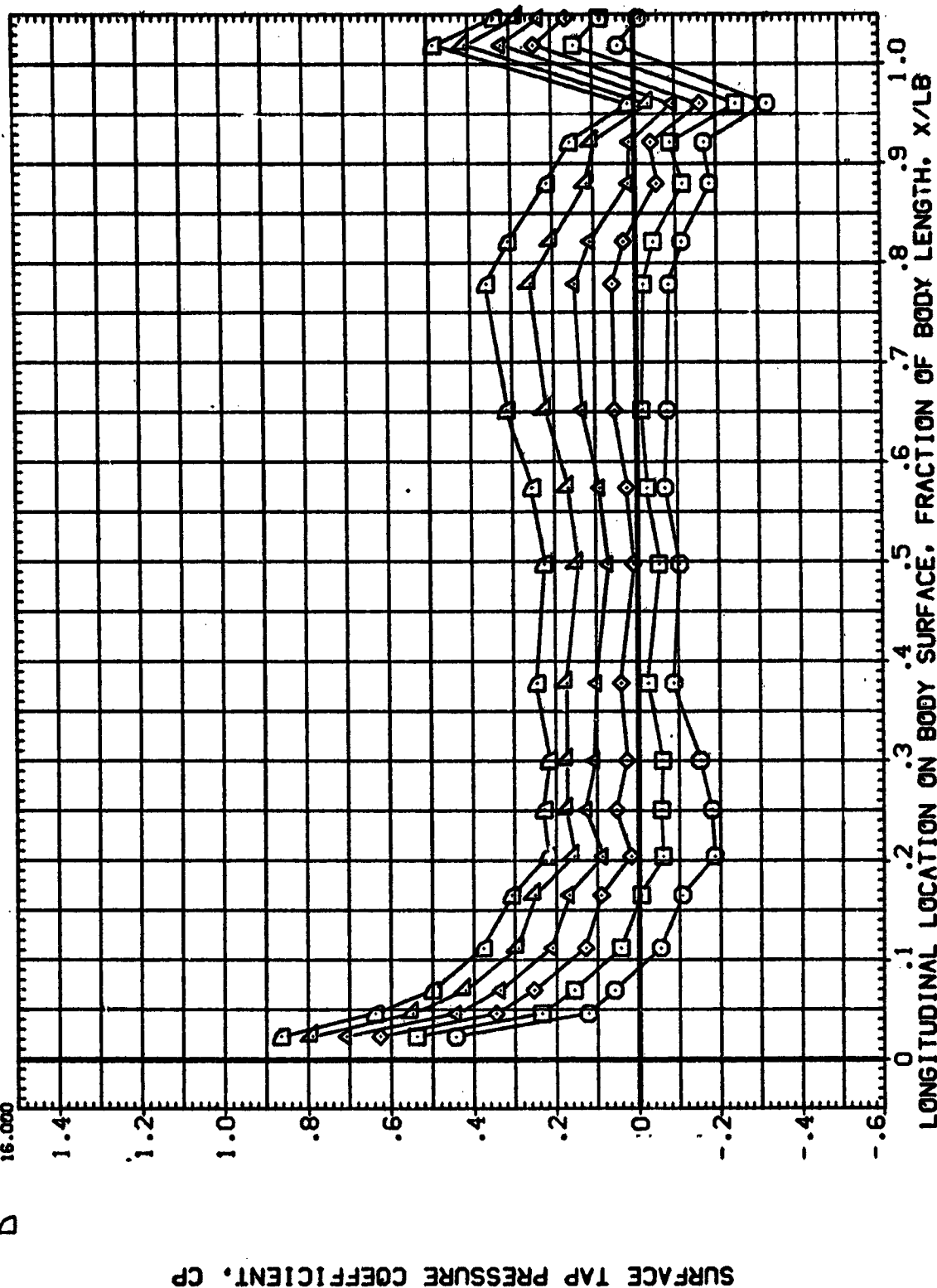


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

PARAMETRIC VALUES:	
RUDDER	.000
BDFLAP	16.300
R-ELVN	.000
SPDRK	55.000
L-ELVN	.000
MACH	1.400

ALPHA	P-HI	BETA
-4.000	90.000	-4.000
.000		
4.000		
8.000		
12.000		
16.000		

SYMBOL
 □ ◇ △ ▽ ▿

SURFACE TAP PRESSURE COEFFICIENT, CP

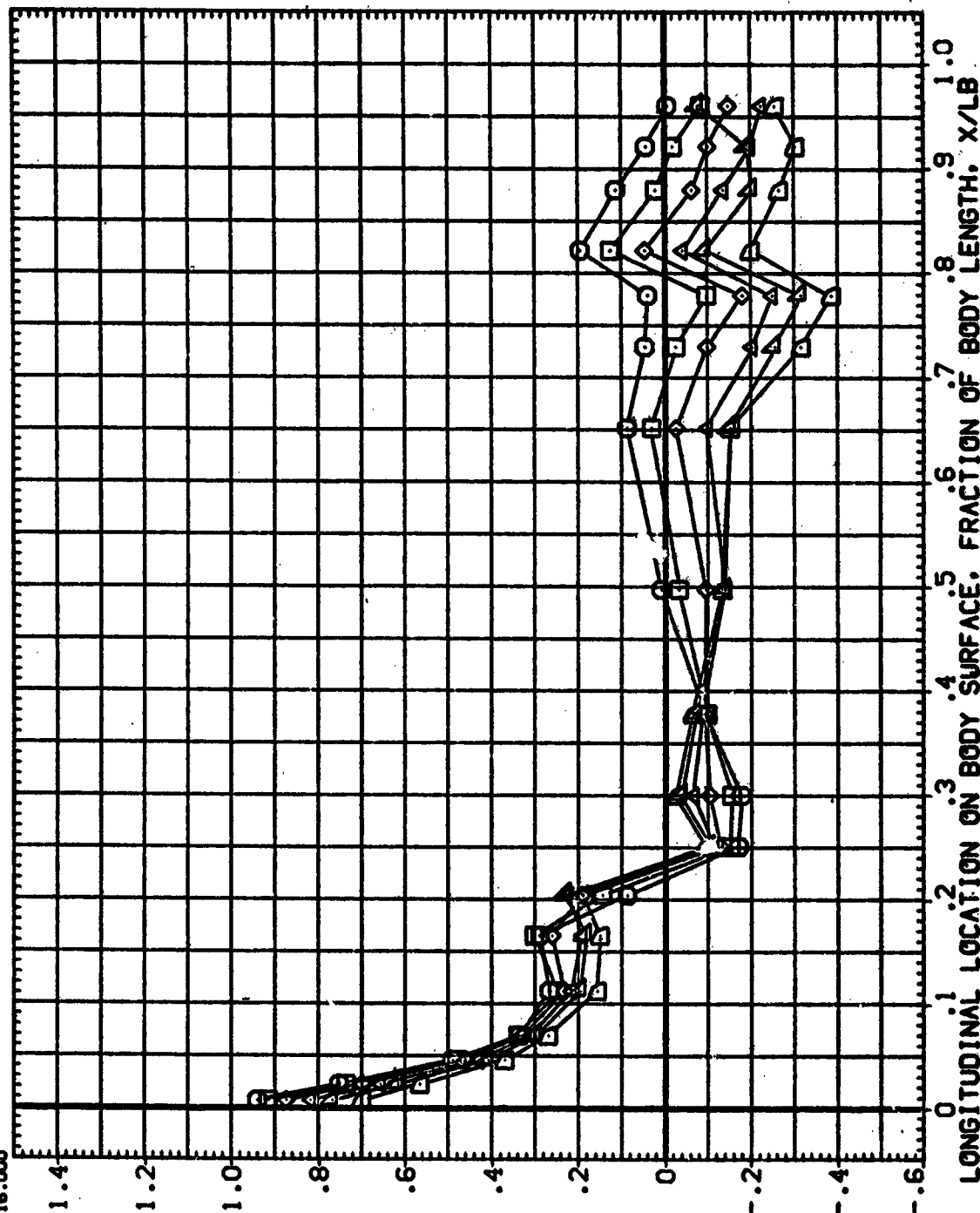


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA PHI BETA
 -4.000 120.000 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ○▽◇□

SURFACE TAP PRESSURE COEFFICIENT, CP

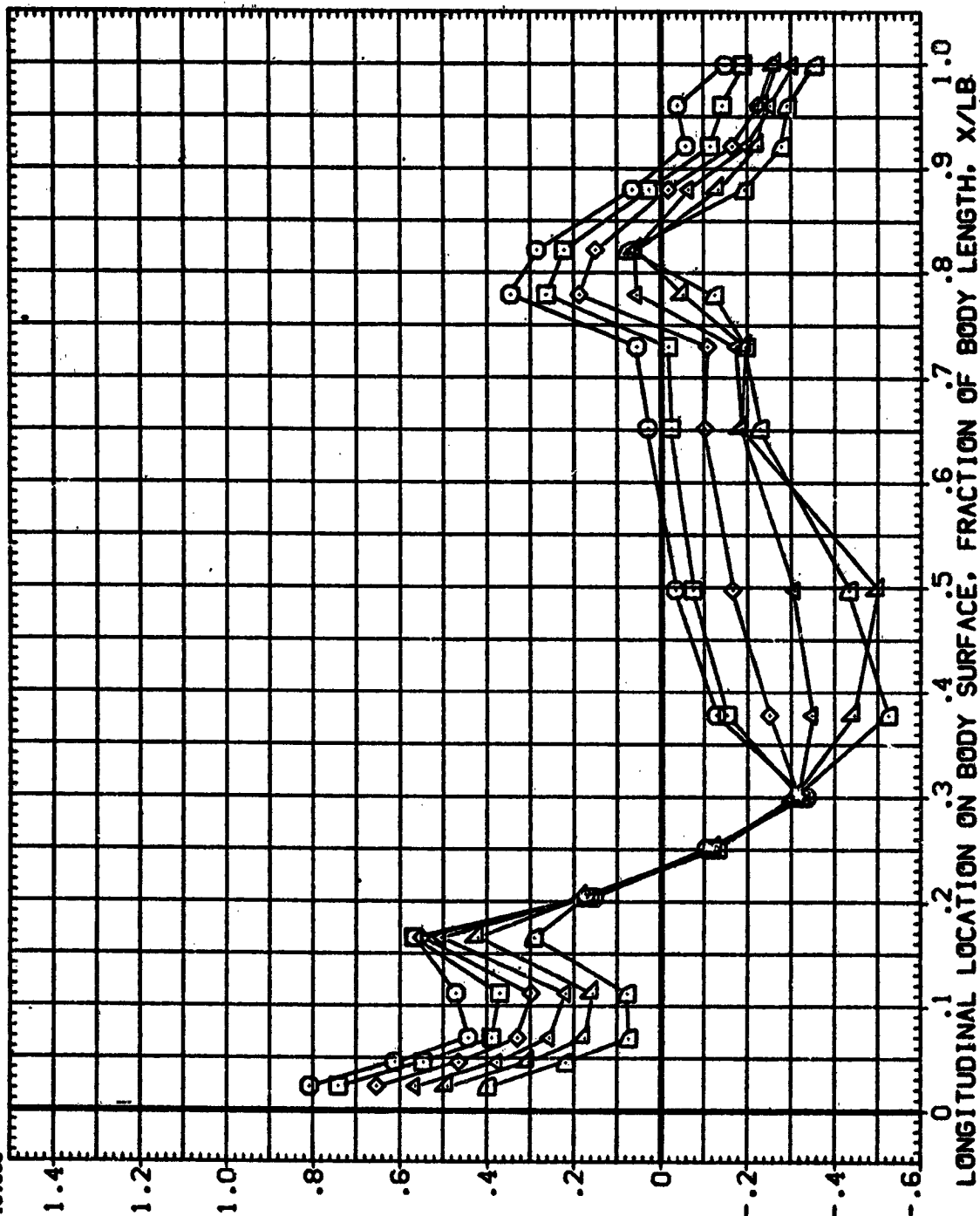


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

SYMBOL	ALPHA	PHI	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRYK	L-ELVN	MACH
▽	-4.000	150.000	-4.000					.000		55.000
◇	.000							16.300		.000
△	4.000							.000		1.400
□	8.000									
○	12.000									
●	16.000									

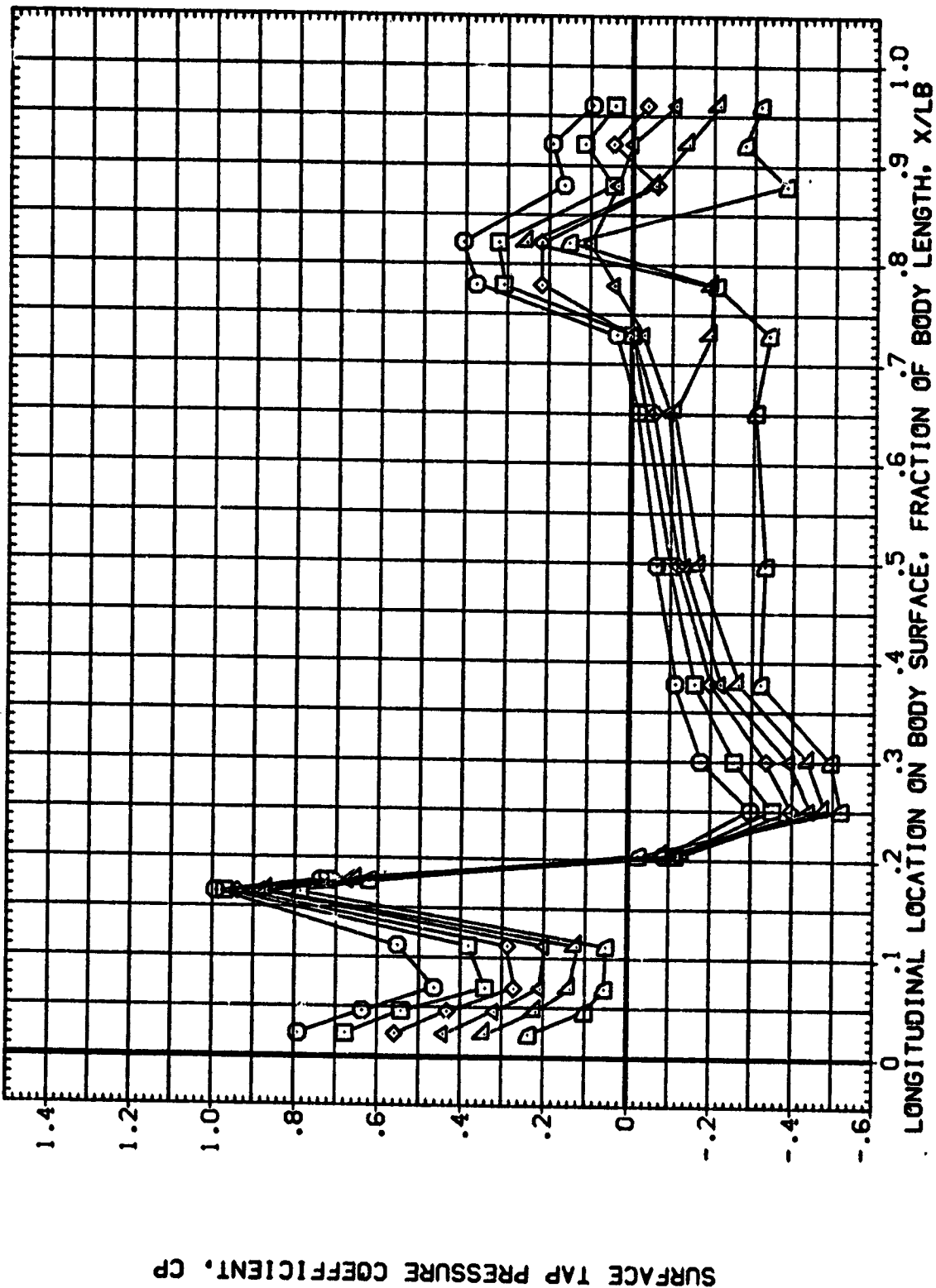


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL	ALPHA	PHI	BETA		PARAMETRIC VALUES
○	-4.000	180.000	-4.000	RUDDER	.000 SPDRBK 55.000
□	.000			BDFLAP	16.300 L-ELVN .000
◇	4.000			R-ELVN	.000 MACH 1.400

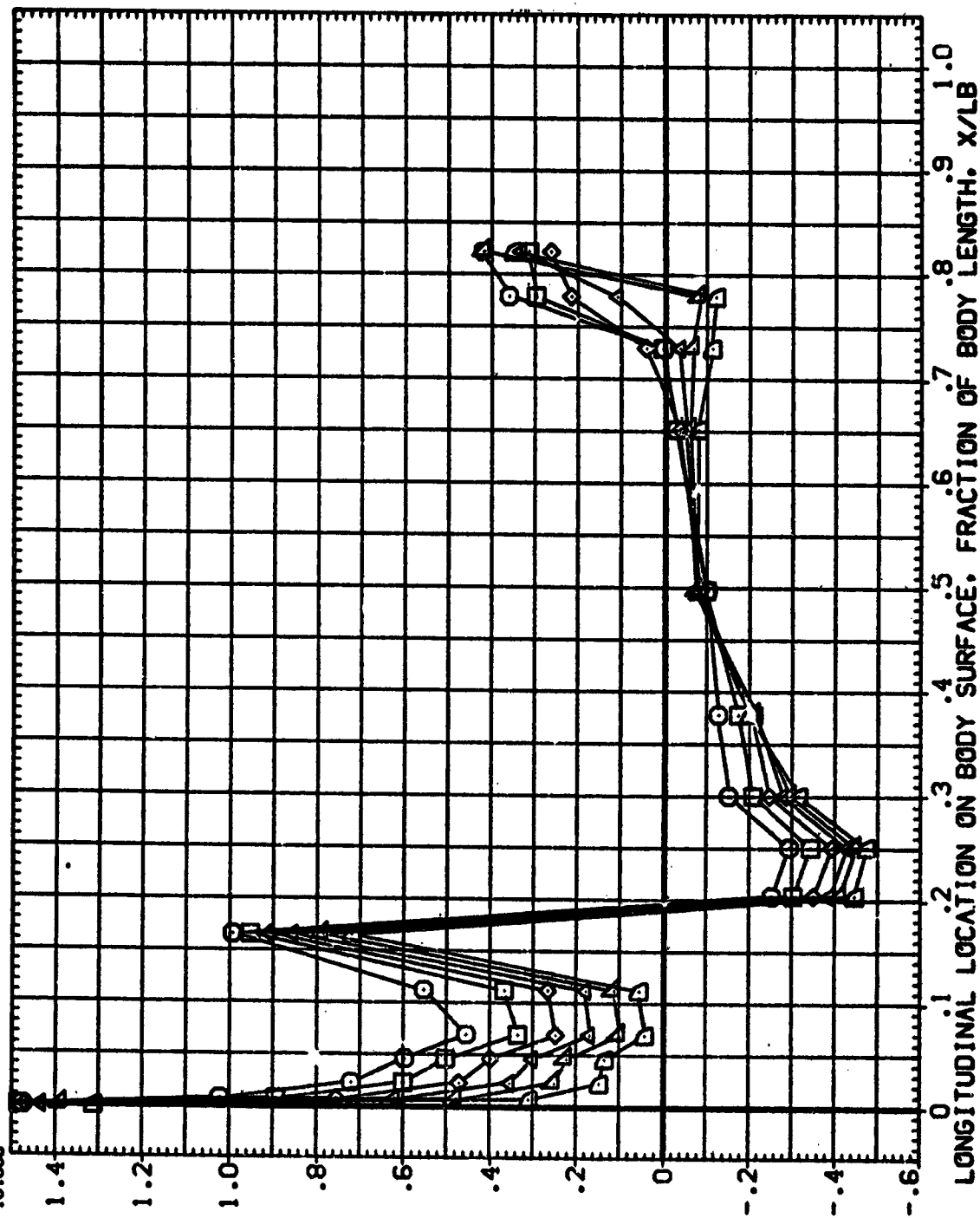


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.000	.000	BOFLAP	.000
◇	.000	.000	.000	R-ELVN	16.300
△	4.000	.000	.000		.000
□	8.000	.000	.000		1.400
	12.000	.000	.000		
	16.000	.000	.000		

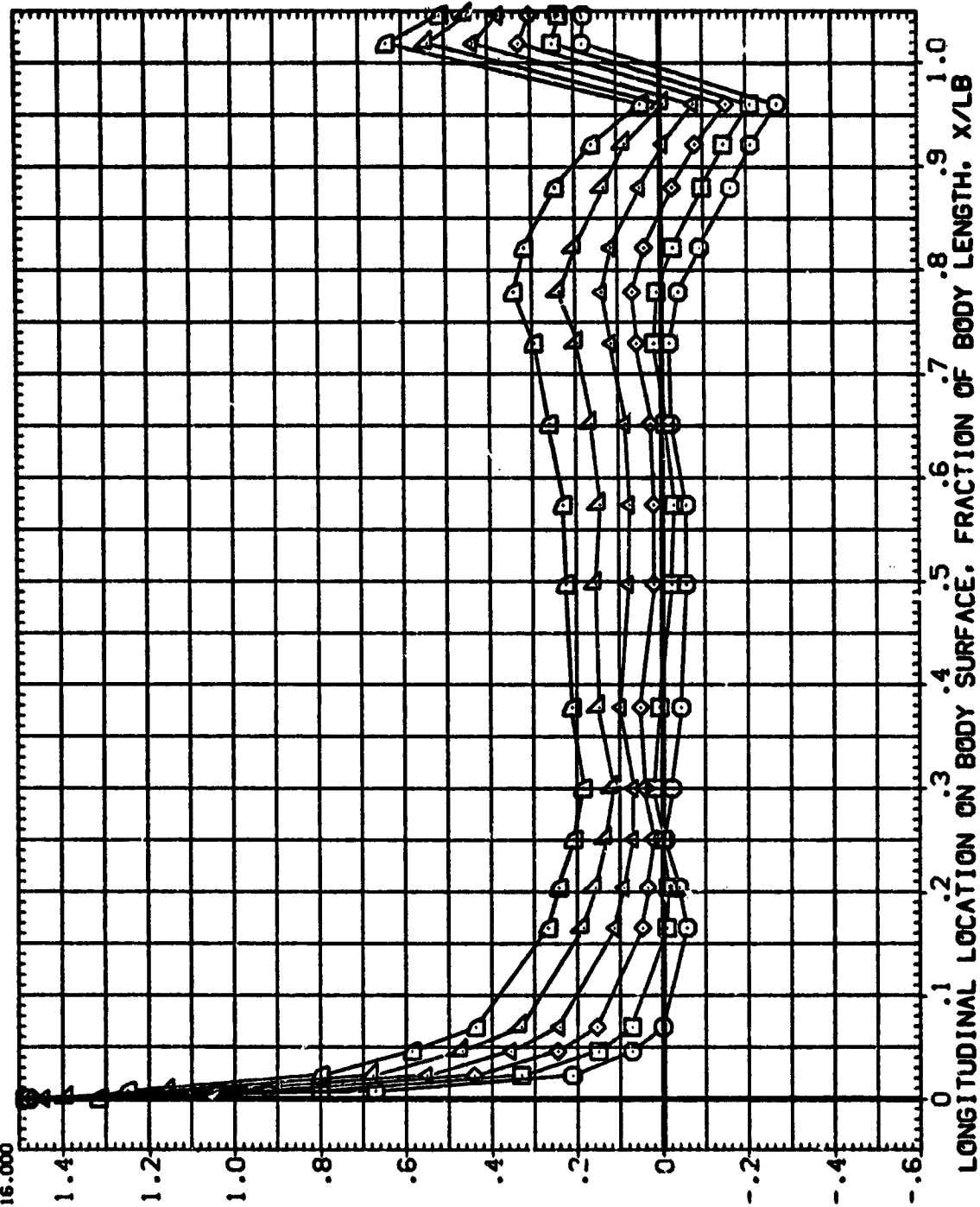


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL	ALPHA	PHI	BETA	PARAMETRIC VALUES
▽	-4.000	40.000	.000	RUDDER
◇	.000			BOFLAP
□	4.000			R-ELVN
△	8.000			
▽	12.000			
◇	16.000			
□				SPDRK
△				L-ELVN
				MACH
				55.000
				.000
				1.400

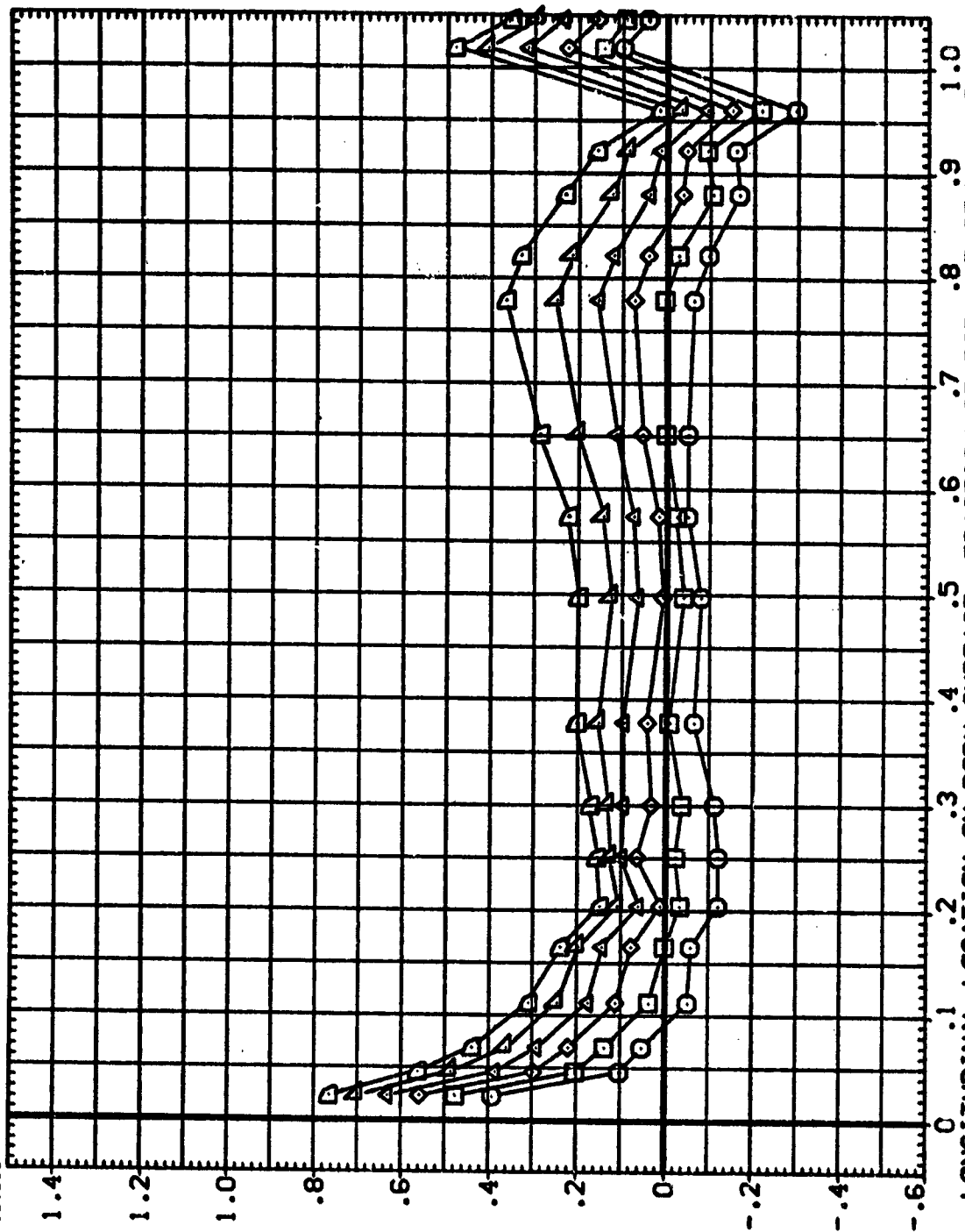


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES	
□	-4.000	90.000	.000	BOFLAP	.000	
◇	4.000			R-ELVN	16.300	
△	8.000				L-ELVN	.000
▽	12.000				MACH	1.400
△	16.000					
						55.000

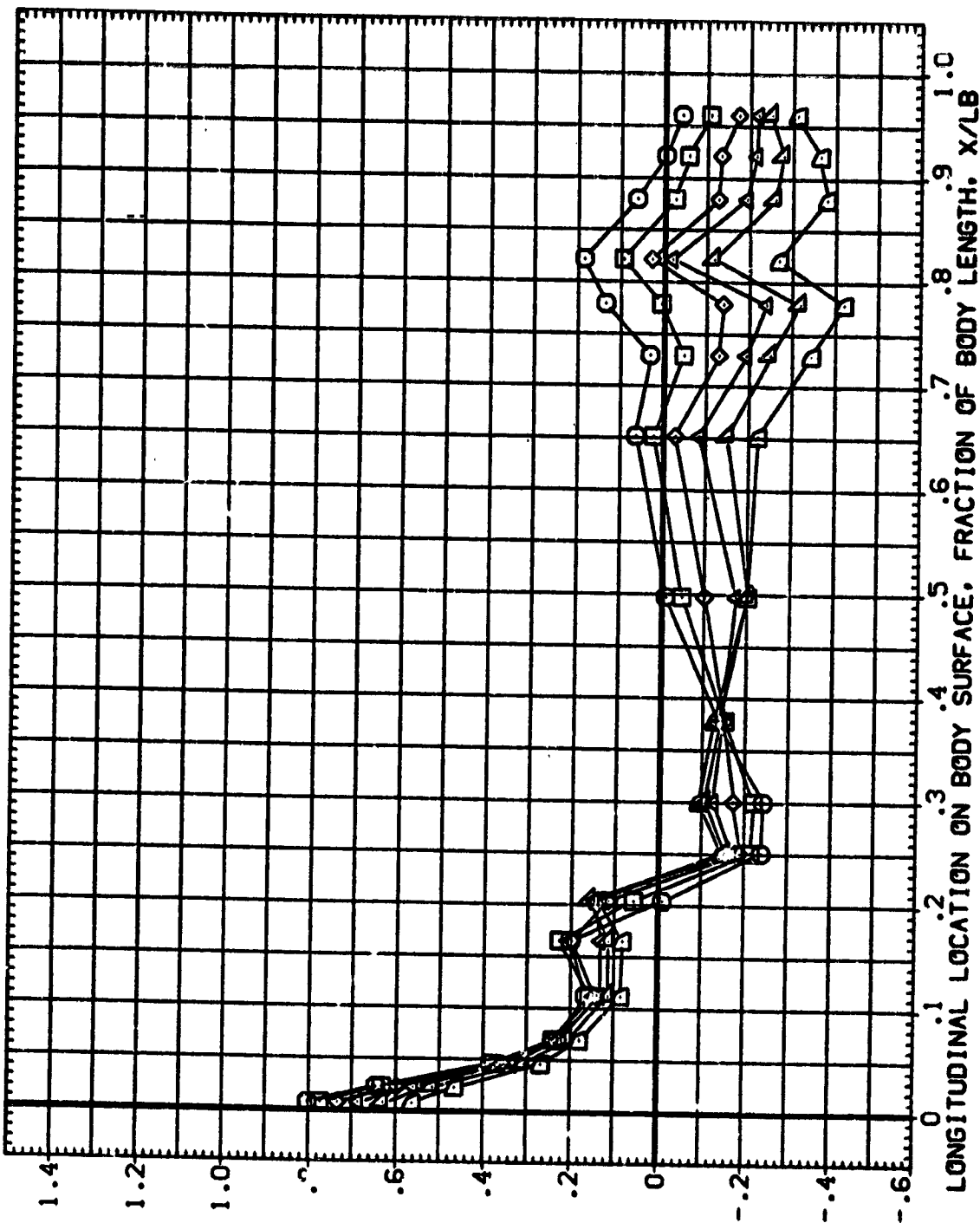


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽
 ◇
 ◊
 □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

PHI
 120.000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000
 30FLAP 16.300
 R-ELVN .000

SPDRBK 55.000
 L-ELVN .000
 MACH 1.400

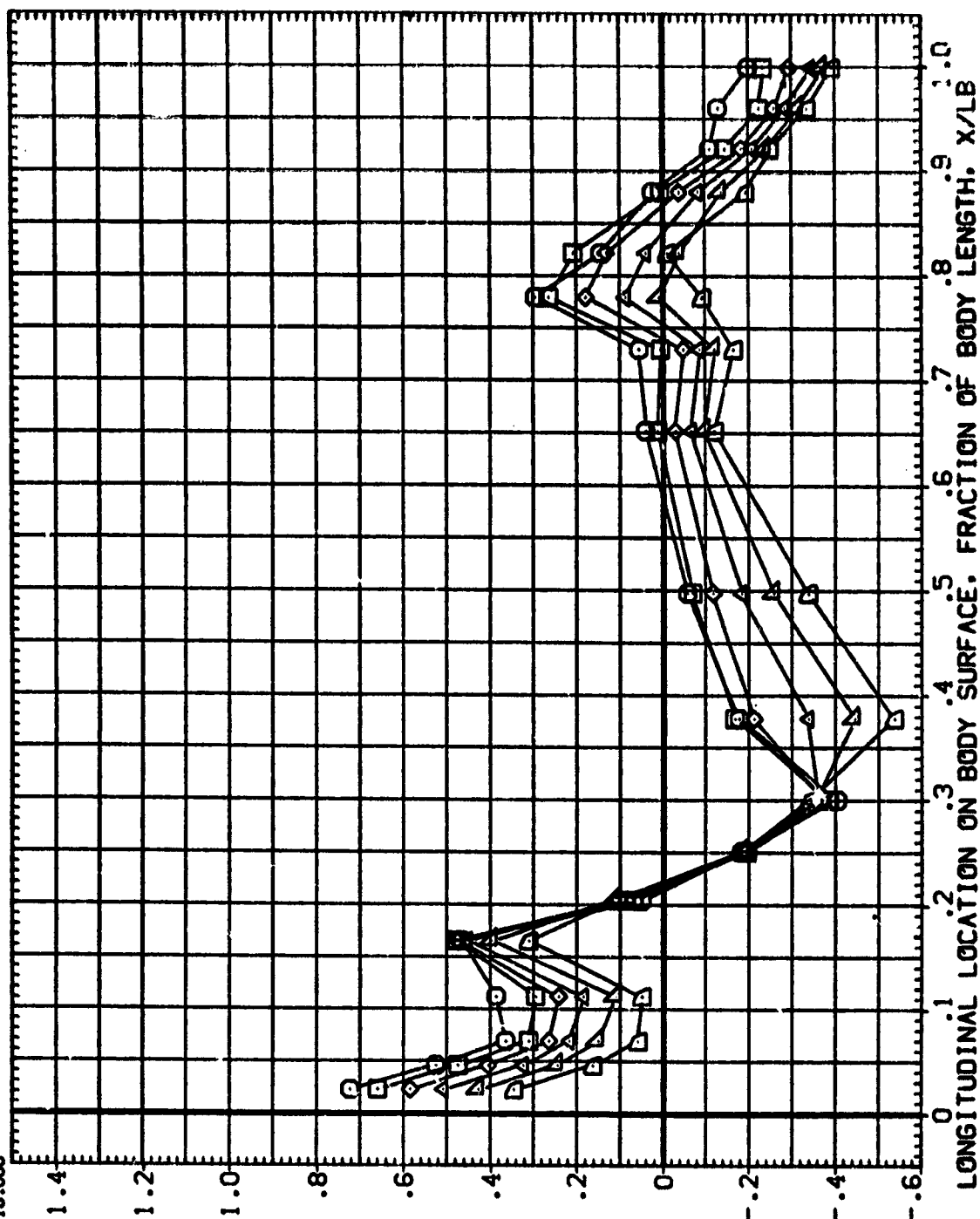


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMFES 11-073(OA148) -140A/B/C/R ORB FUSELAGE

PARAMETRIC VALUES	
.000	SPDRX
16.300	L-ELYN
.000	WACH
	1.400
	.000
	55.000

RUDDER
BOFLAP
R-FL-VN

ALPHA	PHI	BETA
-1.000	150.000	.000

Symbol 

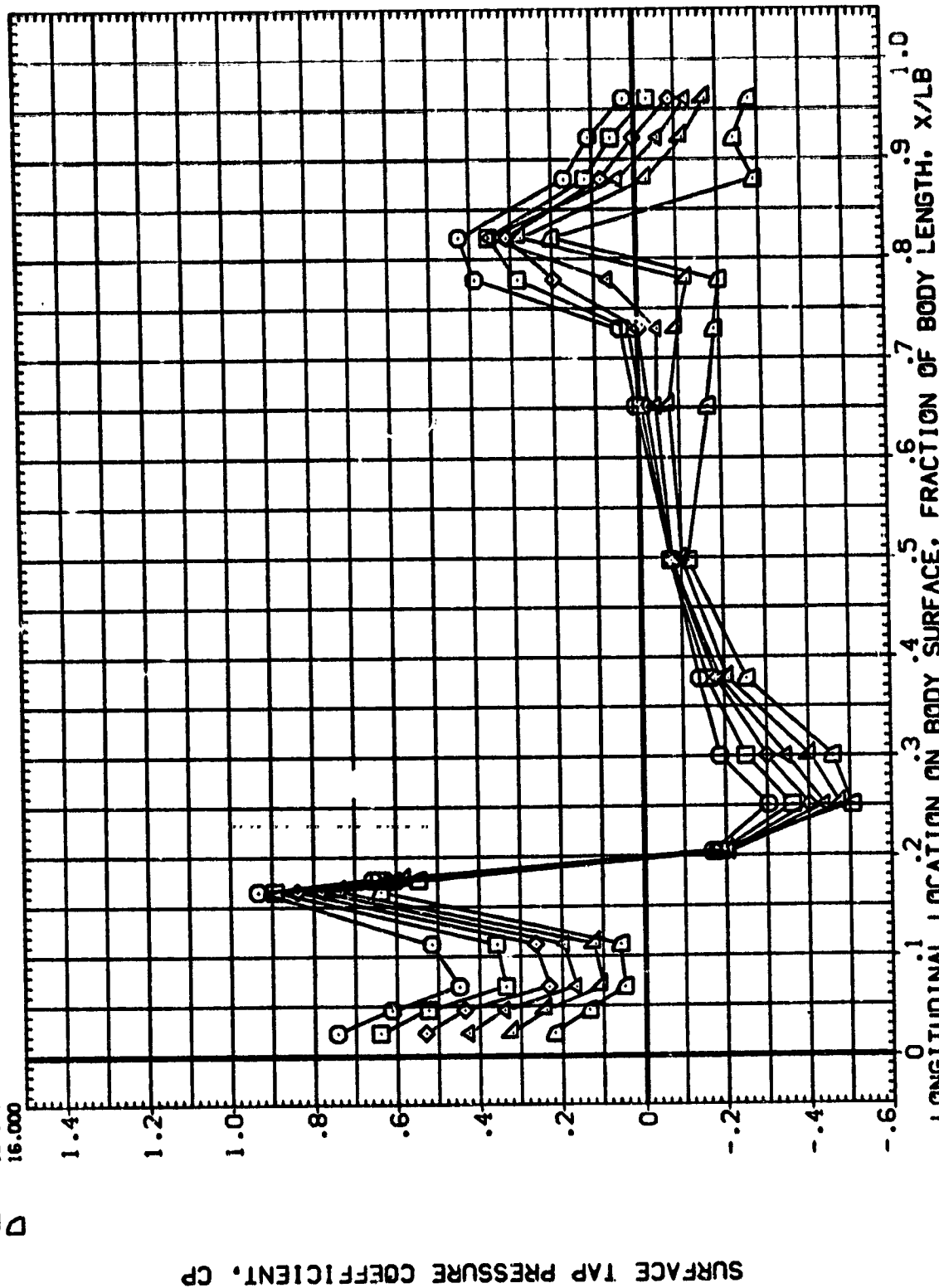


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

SYMBOL
 ▽ ▴ ◊ □

ALPHA PHI BETA
 -4.000 103.000 .000
 .000
 4.000
 8.000
 12.000
 16.000

PARAMETRIC VALUES
 RUDDER .000 SPORRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

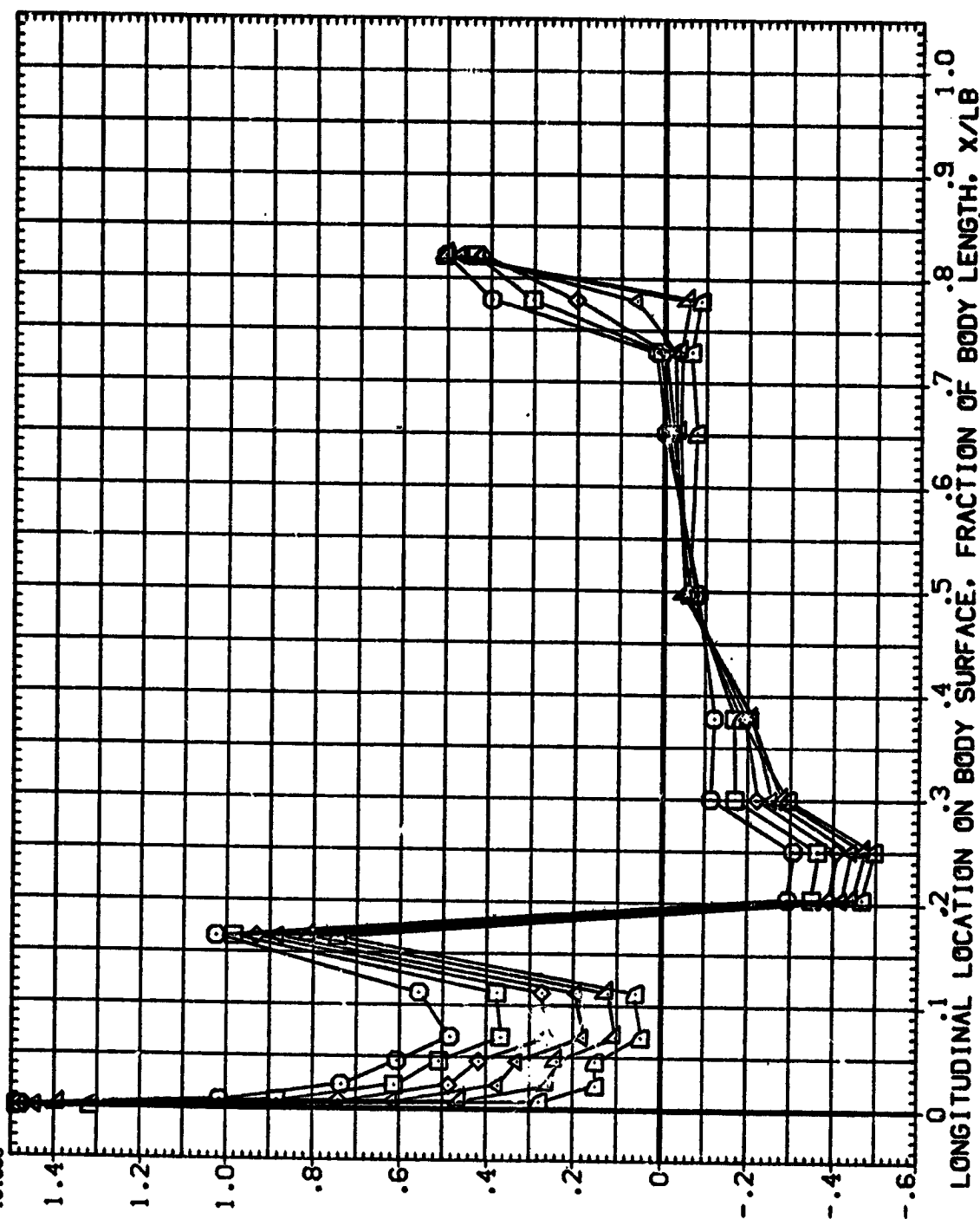


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(C-148) -140A/B/C/R ORB FUSELAGE (IE8B01)

SYMBOL	ALPHA	PHI	BETA	RUDDER	PARAMETRIC VALUES	
□	-4.000	.000	4.000	80FLAP	.000	
◇	.000	.000	.000	R-ELVN	16.300	
△	4.000	.000	.000		L-ELVN	.000
▽	8.000	.000	.000		MACH	1.400
○	12.000	.000	.000			
●	16.000	.000	.000			

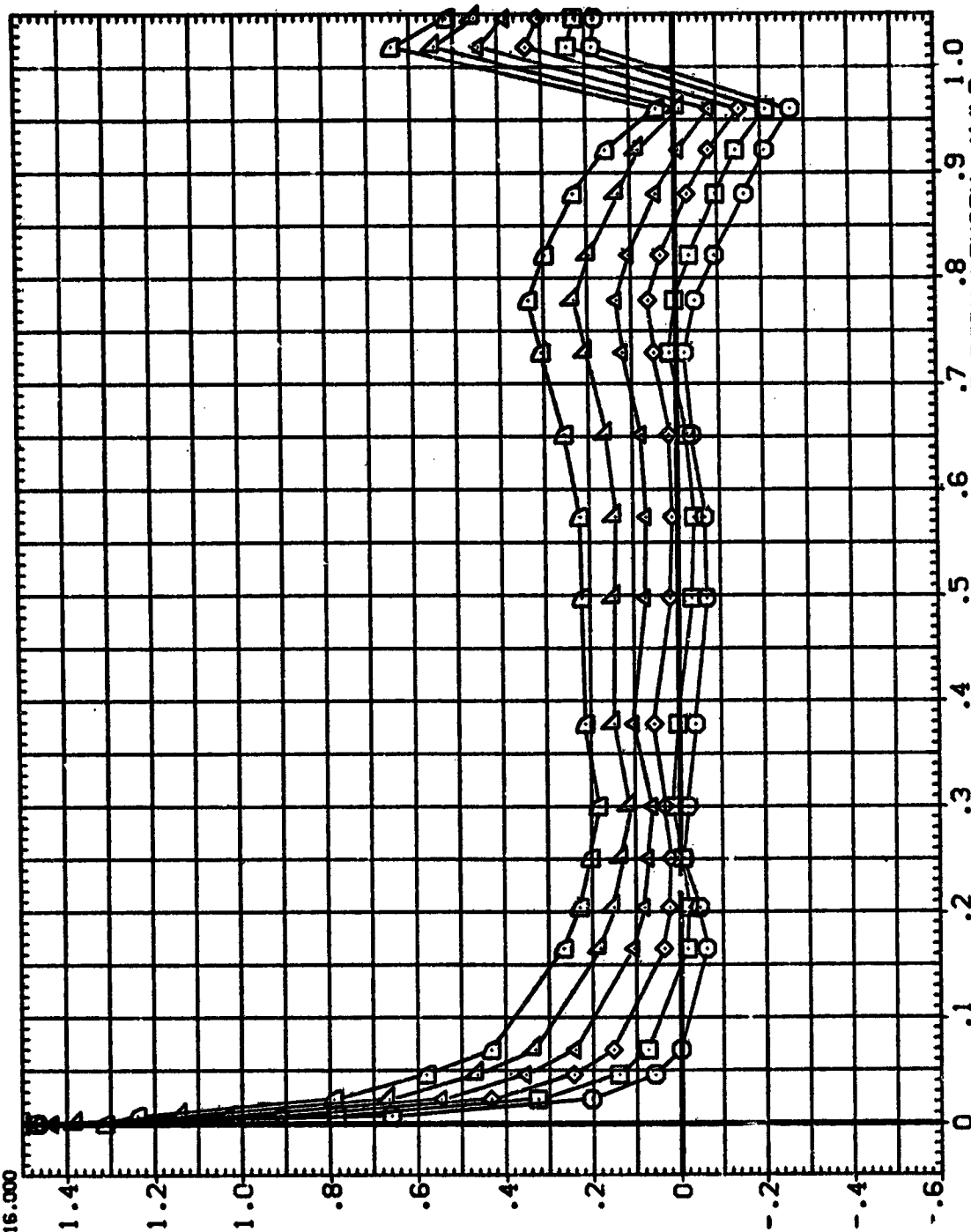


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRRY .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA PHI BETA
 -4.000 40.000 4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ▽ ▴ ◊ □ ○

SURFACE TAP PRESSURE COEFFICIENT, CP

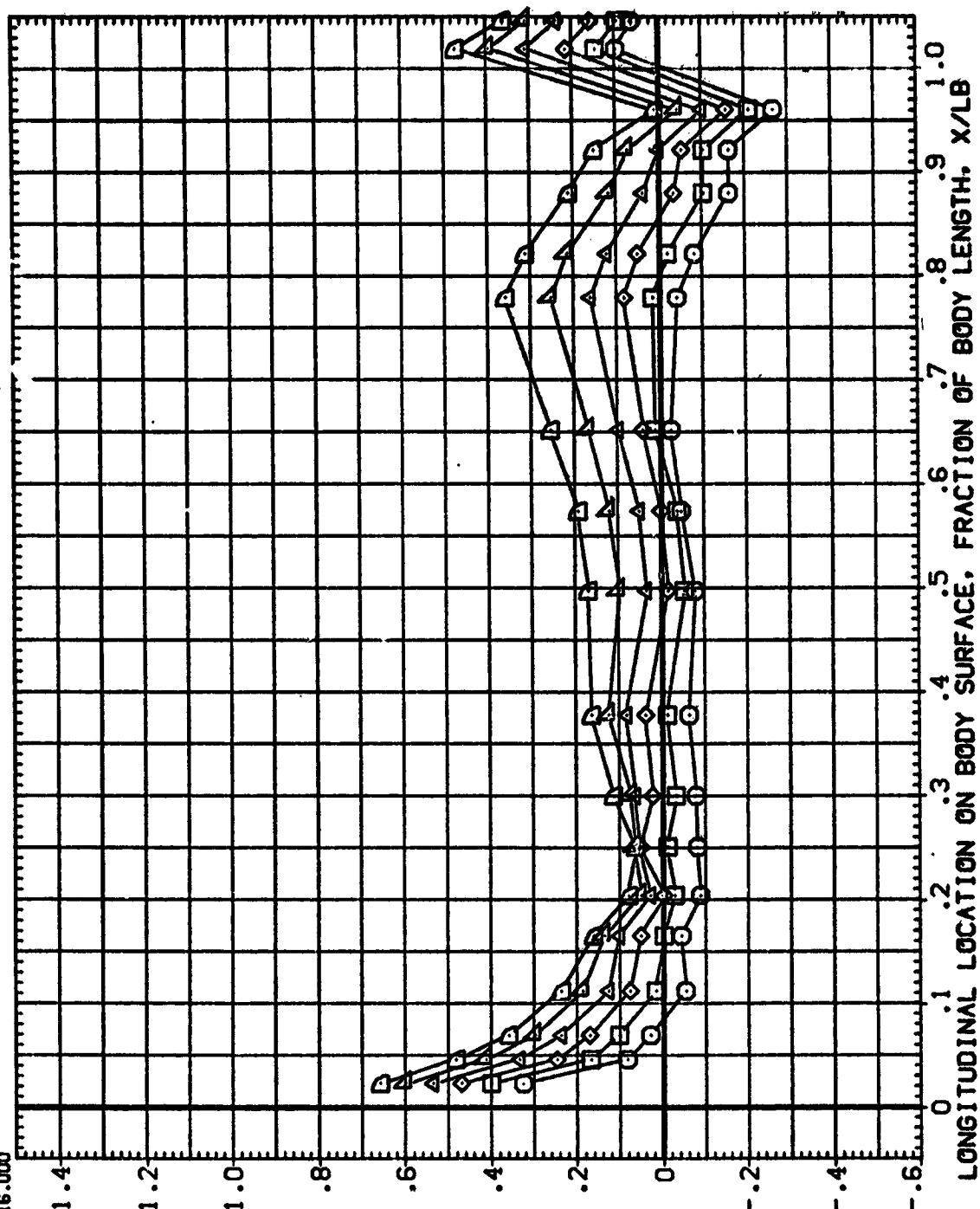


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

PARAMETRIC VALUES	
RUDDER	SS.000
BOFLAP	.000
R-ELVN	16.300
	L-ELVN
	MACH
	1.400

ALPHA	PHI	BETA
-4.000	90.000	4.000
.000		
4.000		
8.000		
12.000		
16.000		

SYMBOL

□ ◇ △ ▽ ▹ ▸

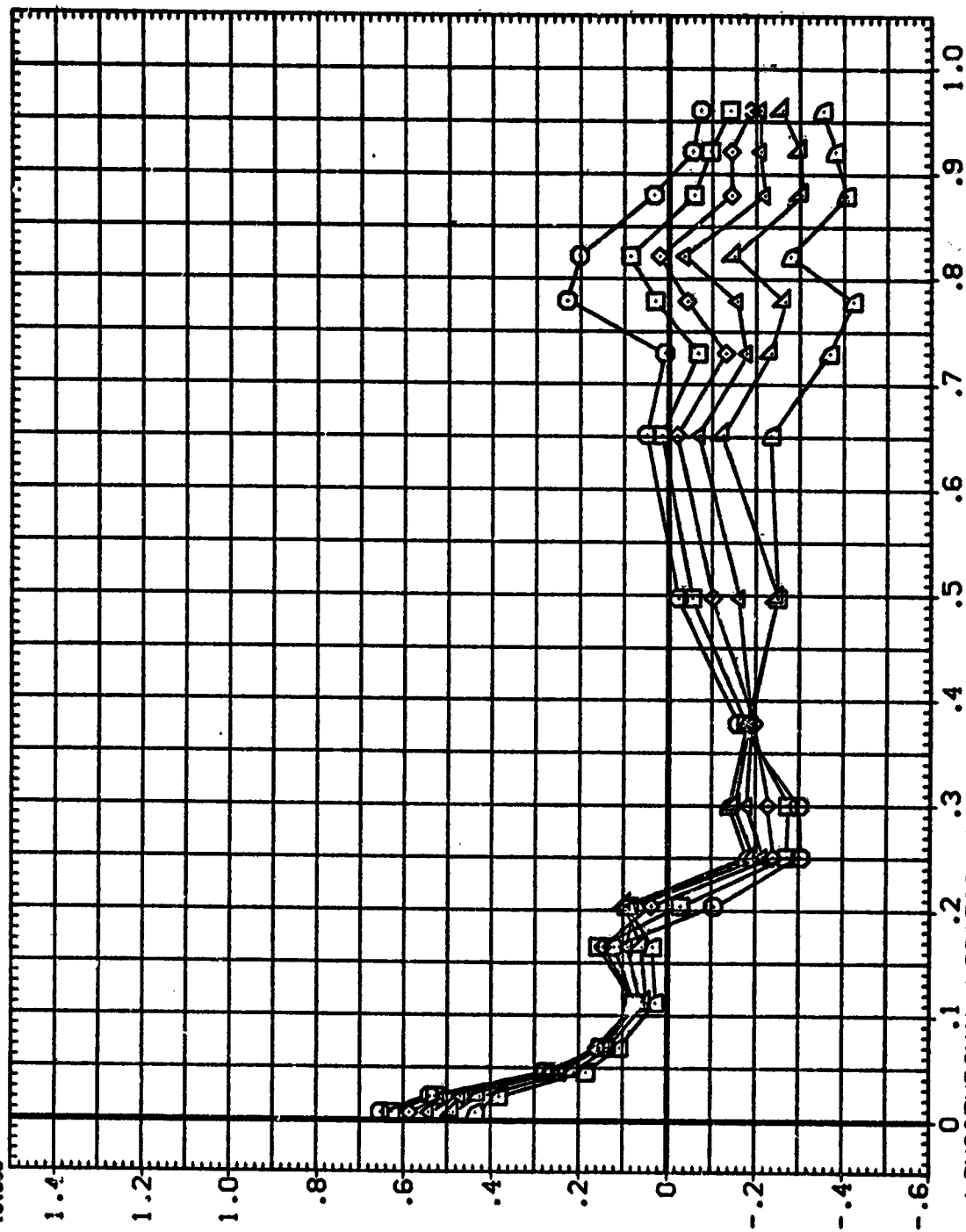


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

SYMBOL
 ○
 □
 ◇
 ▽
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

PHI 120.000

BETA 4.000

PARAMETRIC VALUES

RUDDER	SPDRK	L-ELVN	MACH
80ELAP	.000	16.300	.000
R-ELVN	.000	.000	1.400

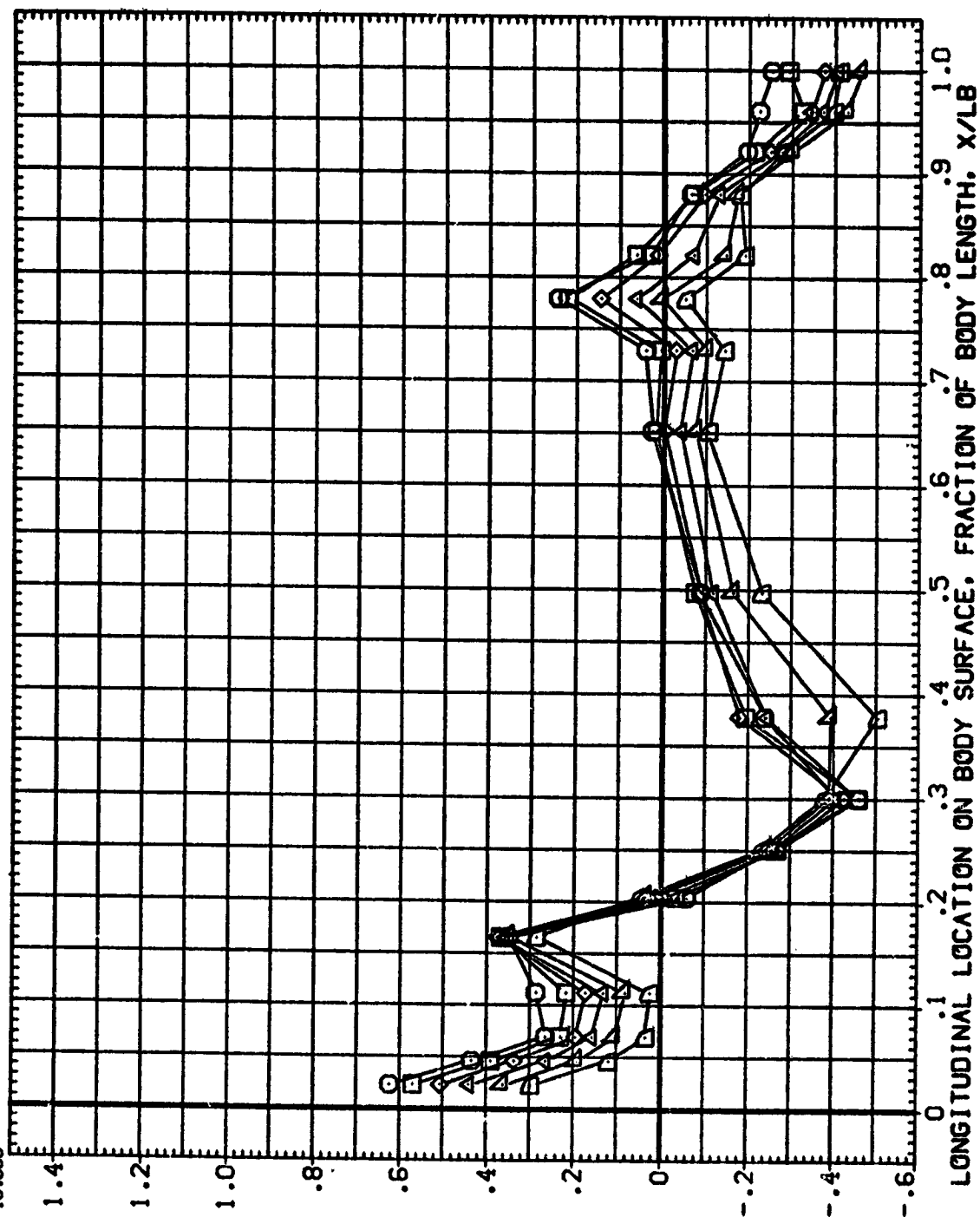


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB FUSELAGE (1E8B01)

SYMBOL	ALPHA	PHI	BETA		PARAMETRIC VALUES	
○	-4.000	150.000	4.000	RUDDER	.000	
□	.000			80FLAP	16.300	
◇	4.000			R-ELVN	.000	
					MACH	1.400
						35.000
						.000
						1.400

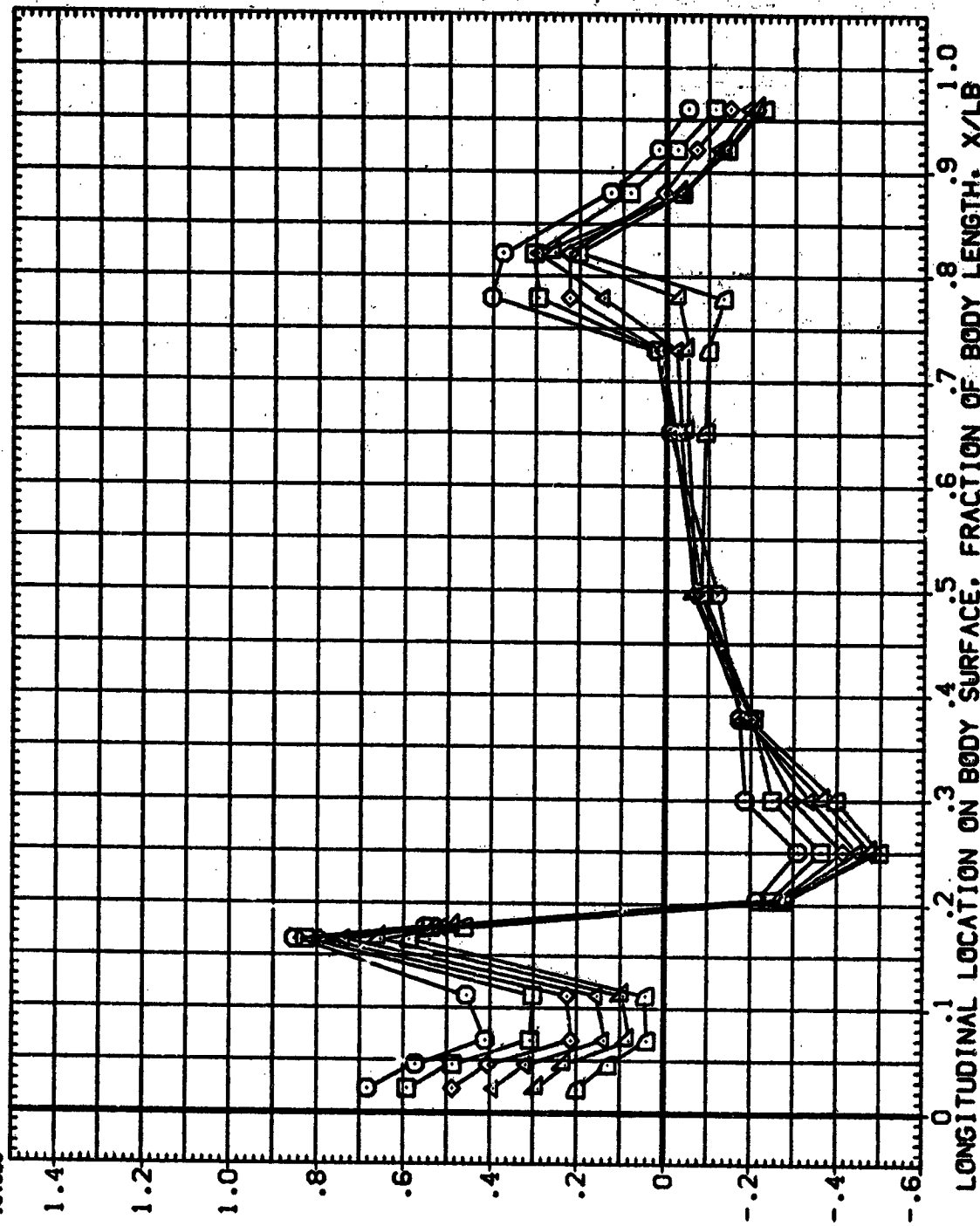


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRNK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

SYMBOL ALPHA PHI BETA
 ▽ -4.000 180.000 4.000
 ◊ .000
 ◊ 4.000
 ◊ 8.000
 ◊ 12.000
 ◊ 16.000

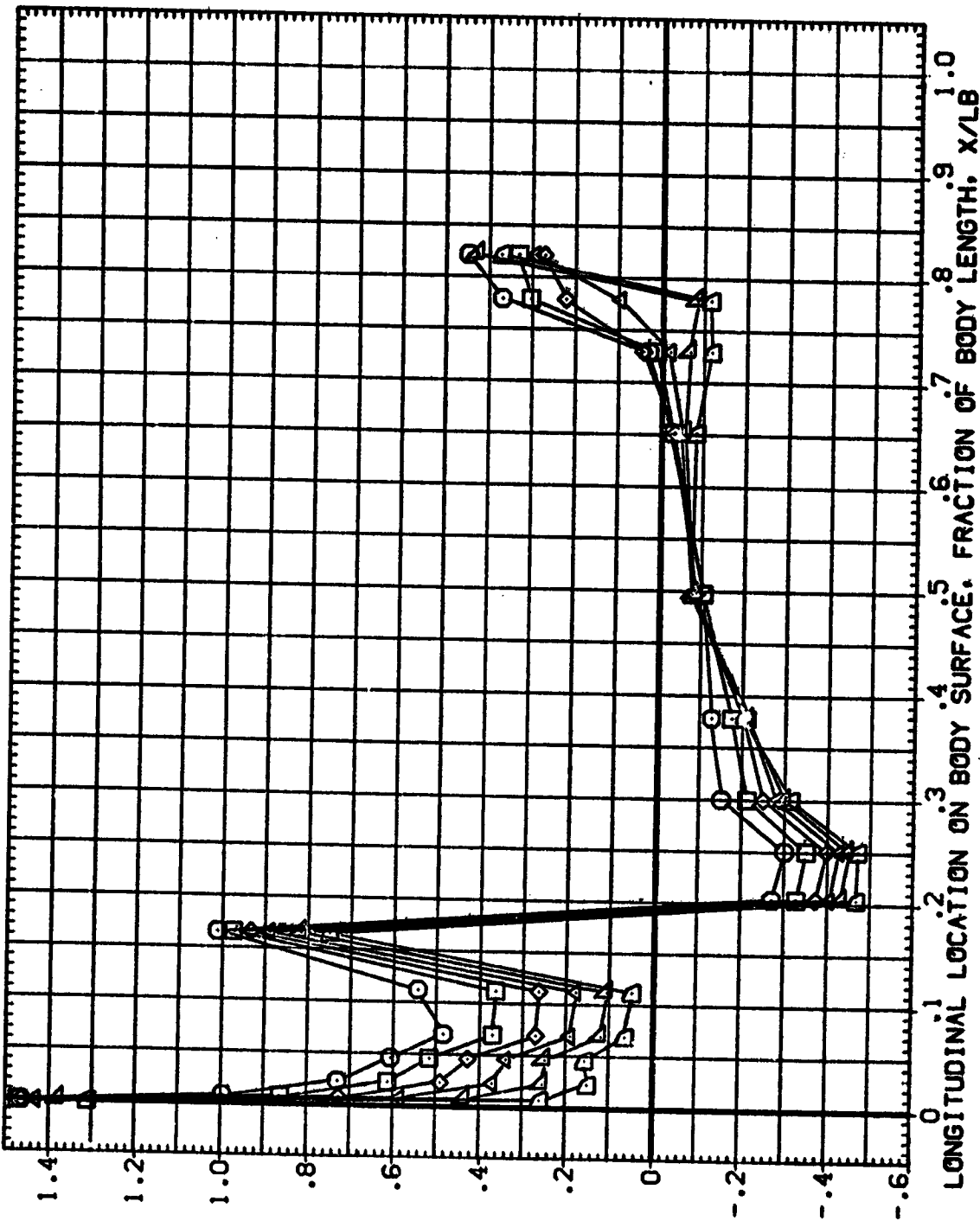


FIG. 8 ORBITER FUSELAGE BODY FLAP DEFLECTION 16.3 DEGREES

AMES 11-075 (CA148) -140A/B/C/R ORB LEFT WING BOT (IE8L05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2V/8V
 .299

SE 1/2
 -8.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRBK
 L-ELVN
 MACH

55.000
 .000
 .600

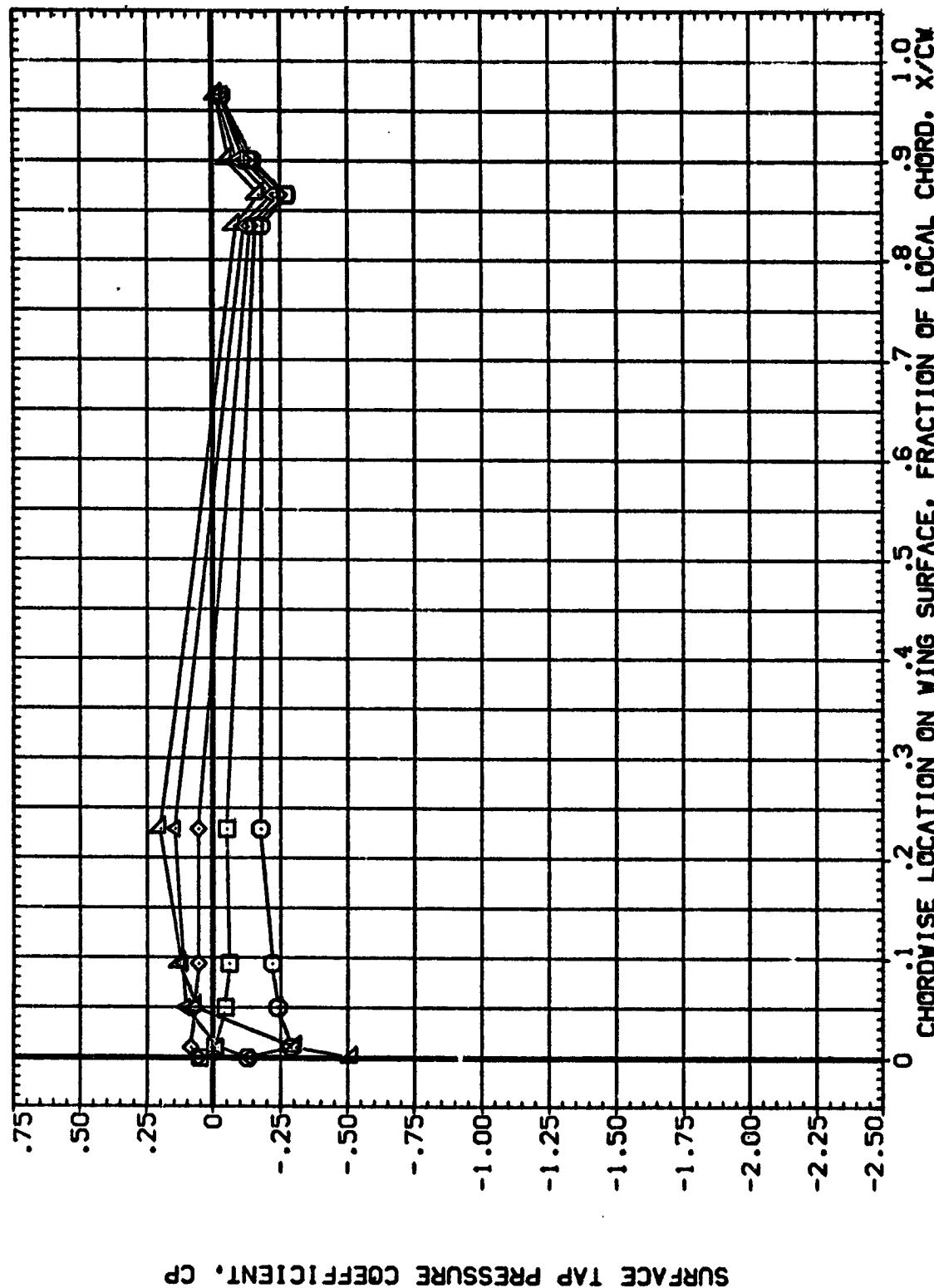


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

ALPHA 21/6V BETA
 -4.000 .427 -8.000

SYMBOL
 □ ◇ △ ▽

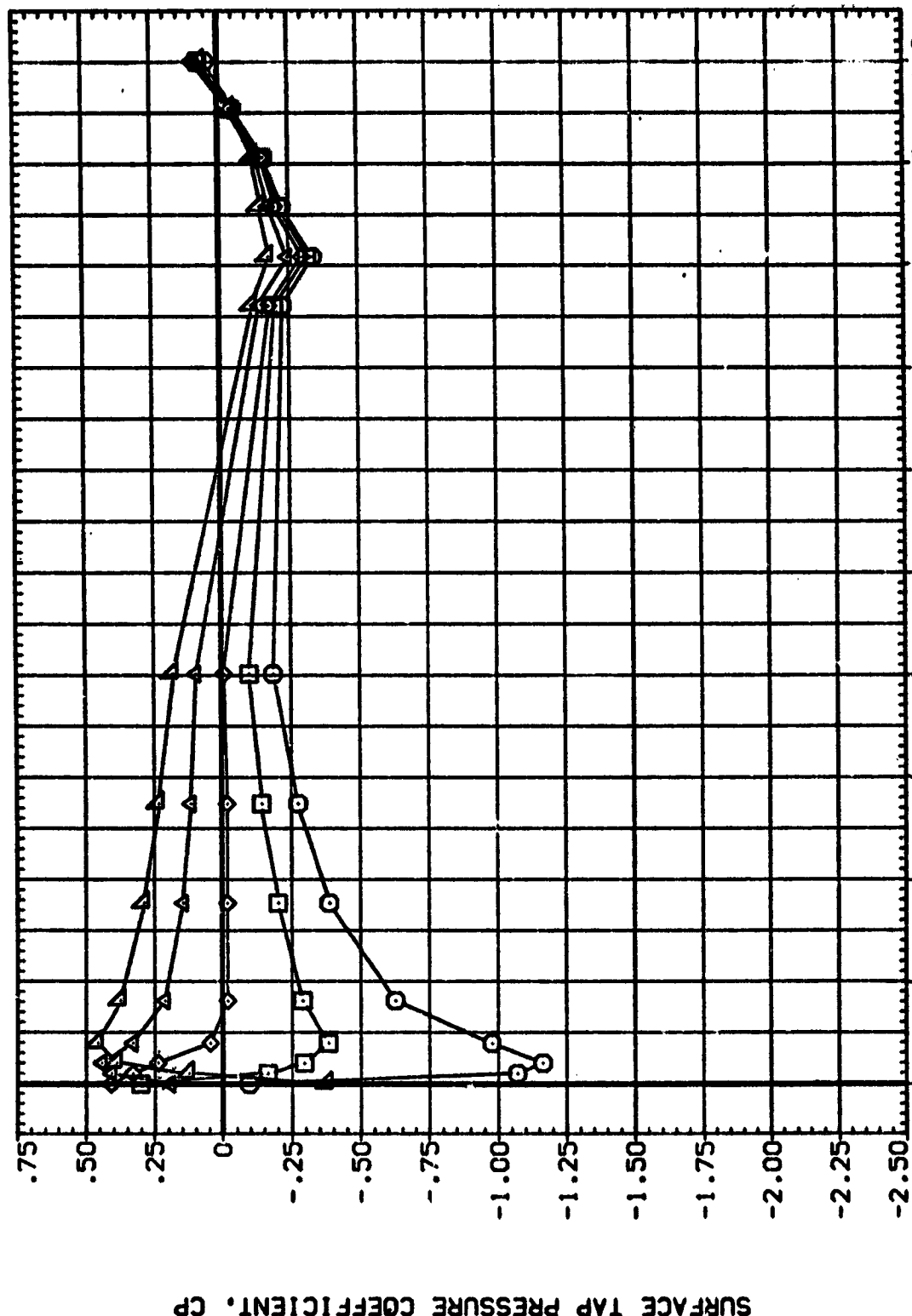


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L05)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES	
▽	-4.000	.673	-8.000	BDFLAP	.000	SP08RZ
◇	.000			R-ELVN	16.300	L-ELVN
□	4.000				.000	MACH
◇	8.000					
▽	12.000					

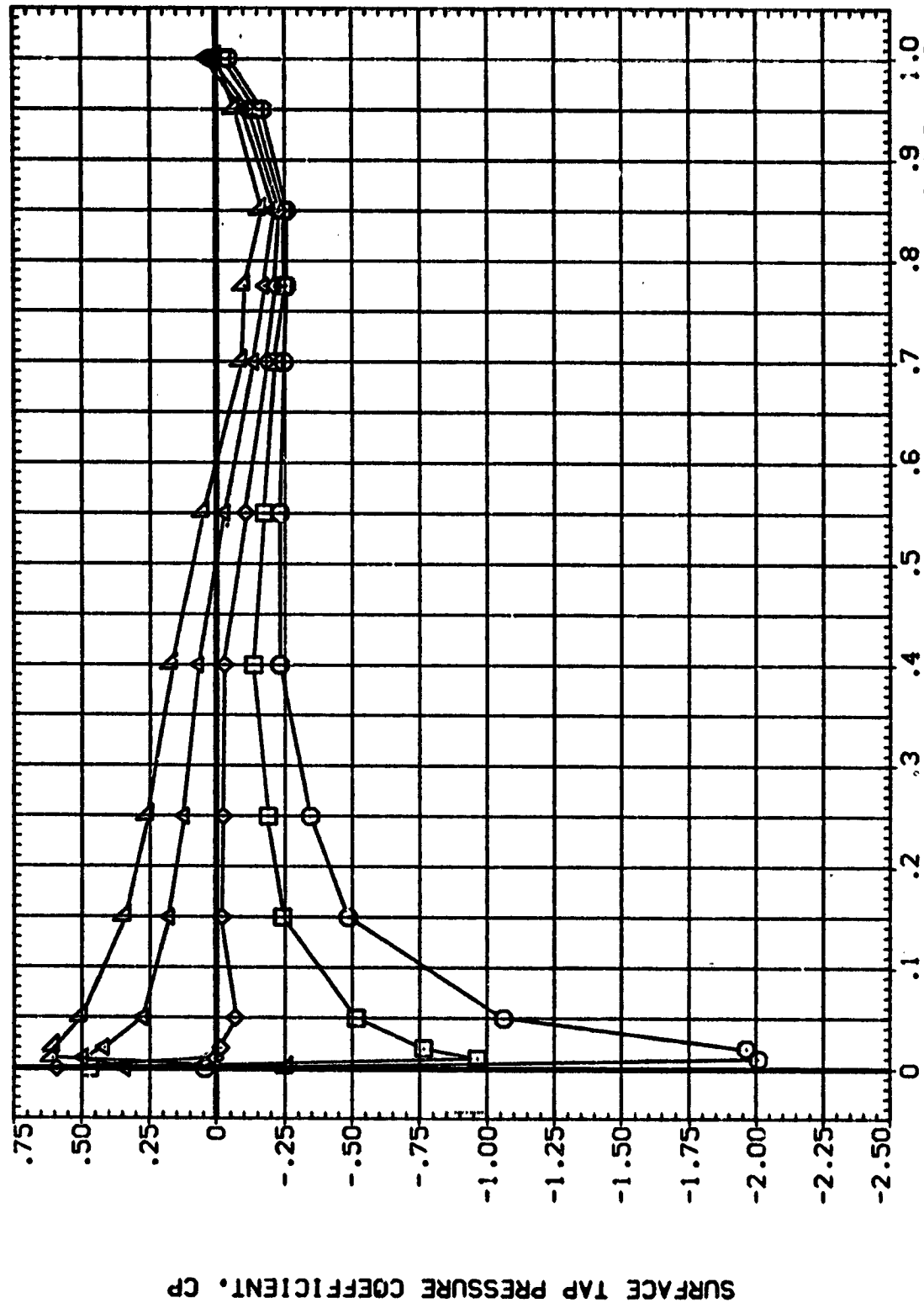


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 ▽
 ◊
 □
 ◊
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .887
 BETA -8.000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPOBRK
 16.300 L-ELVN
 .000 MACH
 55.000
 .000
 .600

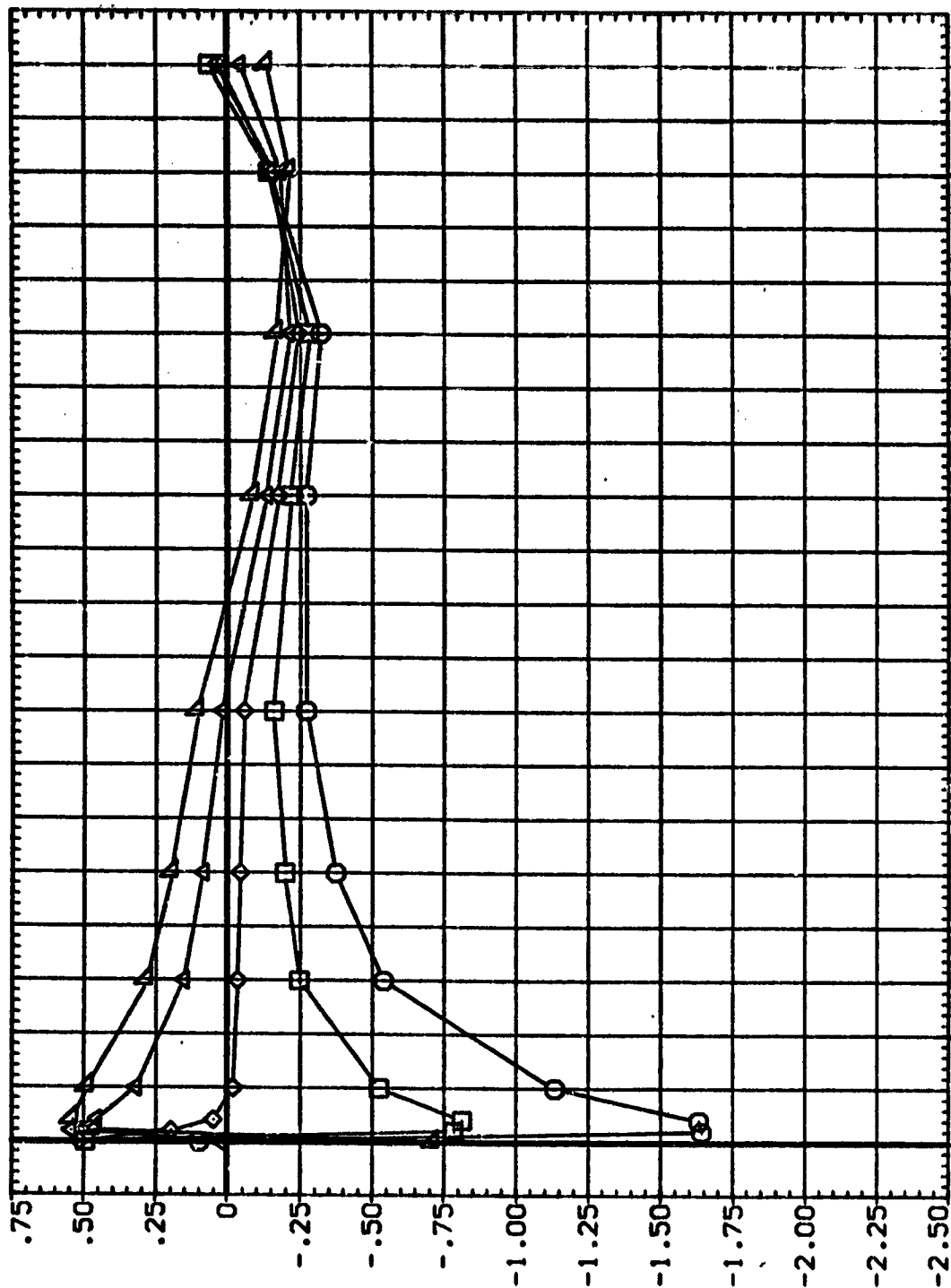


FIG. 9 LEFT WING BOTTOM SURFACE ELEVN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZV/BV BETA
 .972 -8.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BOFLAP 16.300 L-CLVN .000
 R-ELVN .000 MACH .500

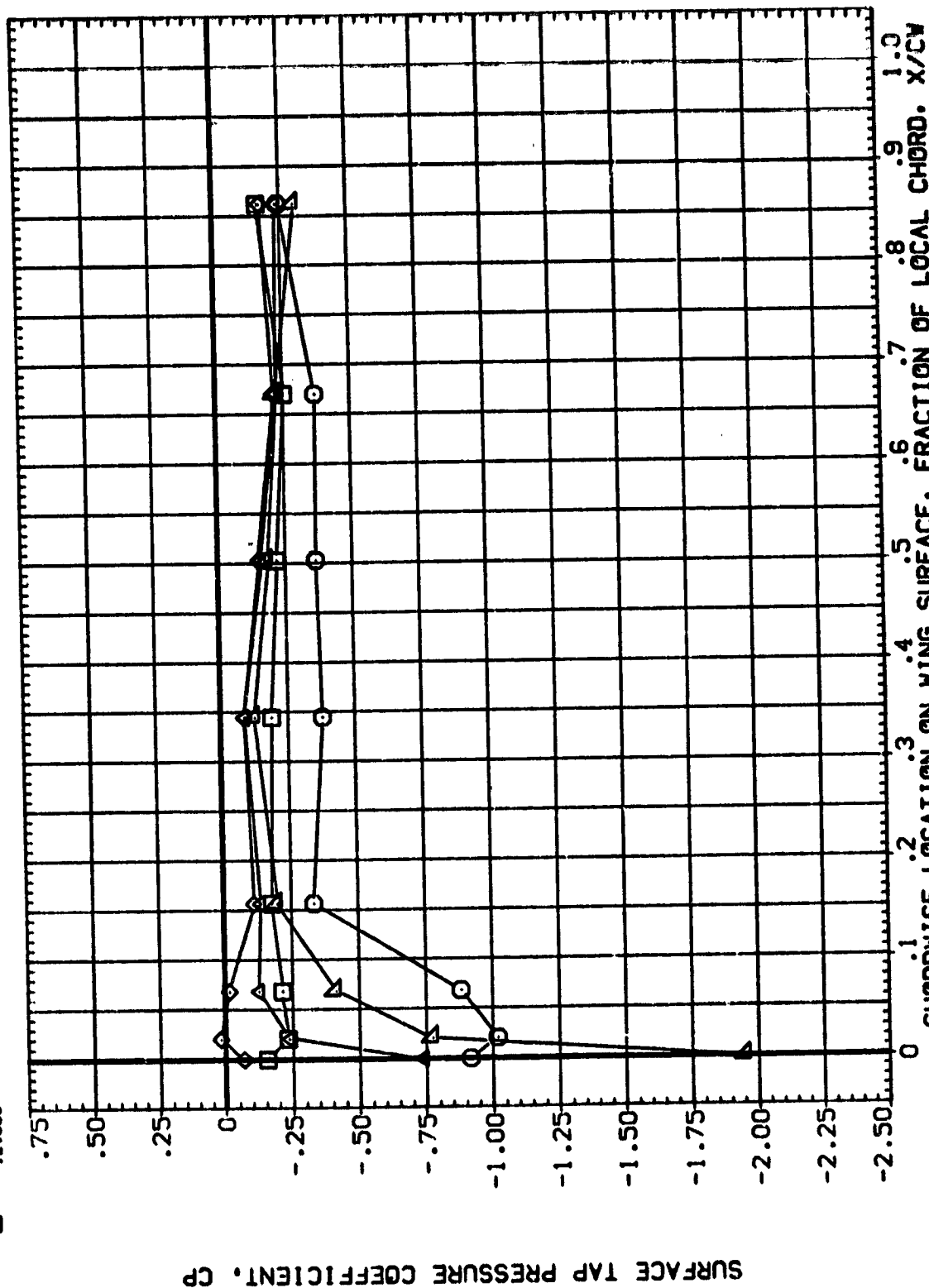


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

21/BM BETA
.299 -4.000

PARAMETRIC VALUES
RUDDER .000 SPDBRK .55.000
BOFLAP 16.300 L-ELVN .000
R-ELVN .000 PACH .500

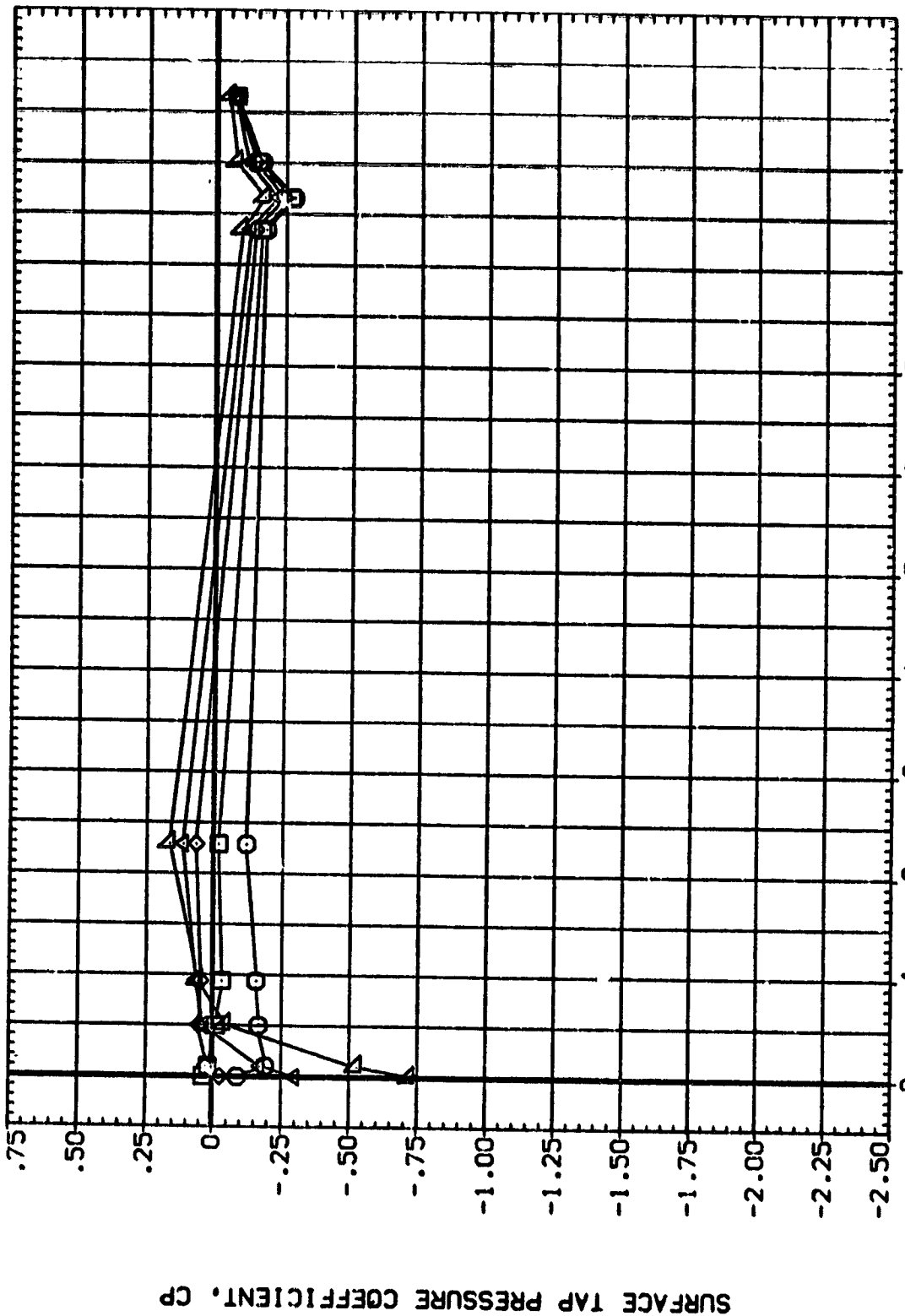


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L05)

SYMBOL	ALPHA	27/8V	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.427	-4.000	BOFLAP	.000 SPDRK
◇	.000			R-ELVN	16.300 L-ELVN
□	4.000				.000 MACH
△	8.000				.500
▽	12.000				

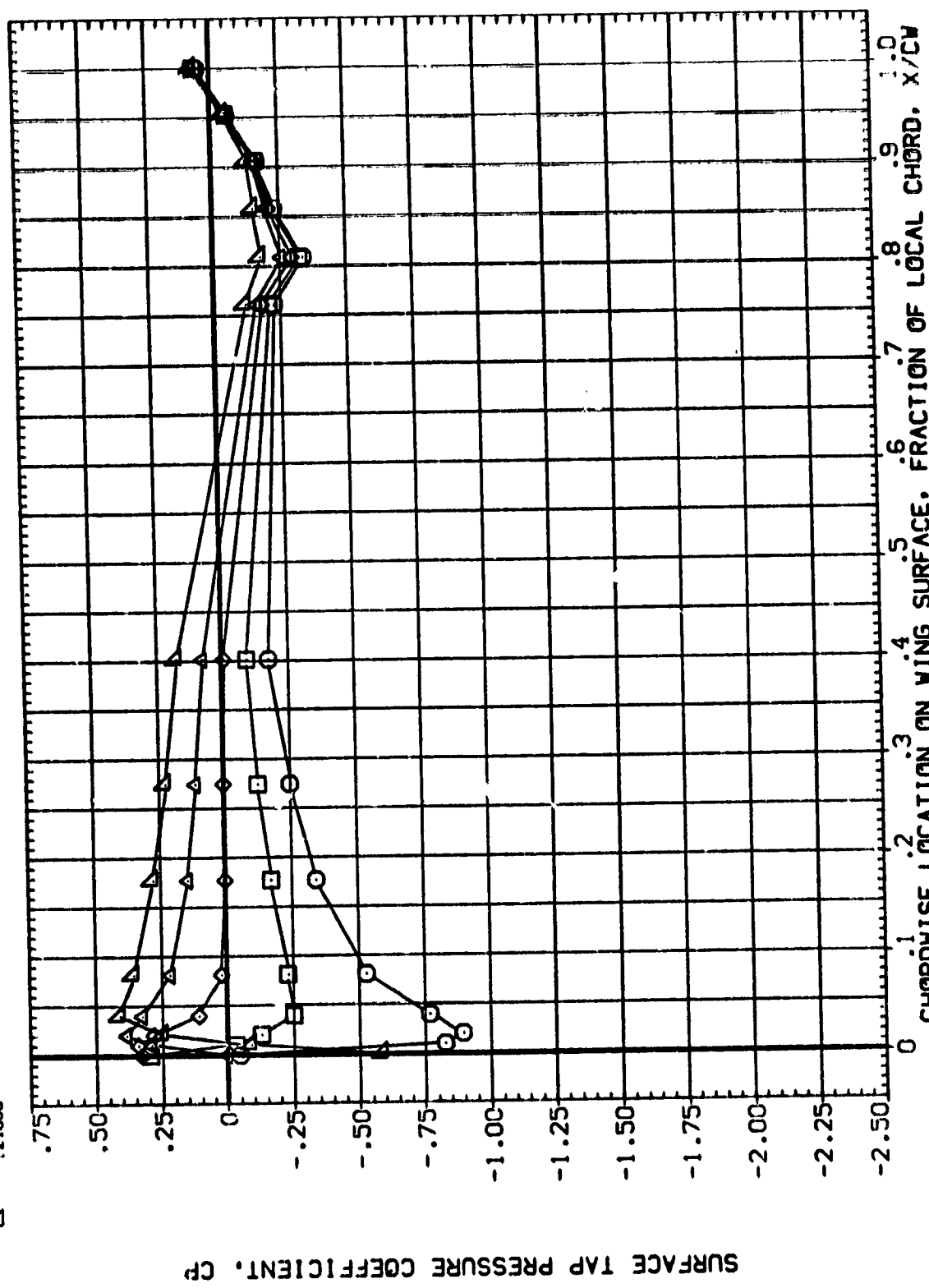


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L05)

SYMBOL	ALPHA	2V/BN	BETA	RUDDER	PARAMETRIC VALUES
△	-4.000	.673	-4.000	BOFLAP	.000 SPDBRK
◊	.000			R-ELVN	16.300 L-ELVN
□	4.000				.000 MACH
▽	8.000				
▽	12.000				

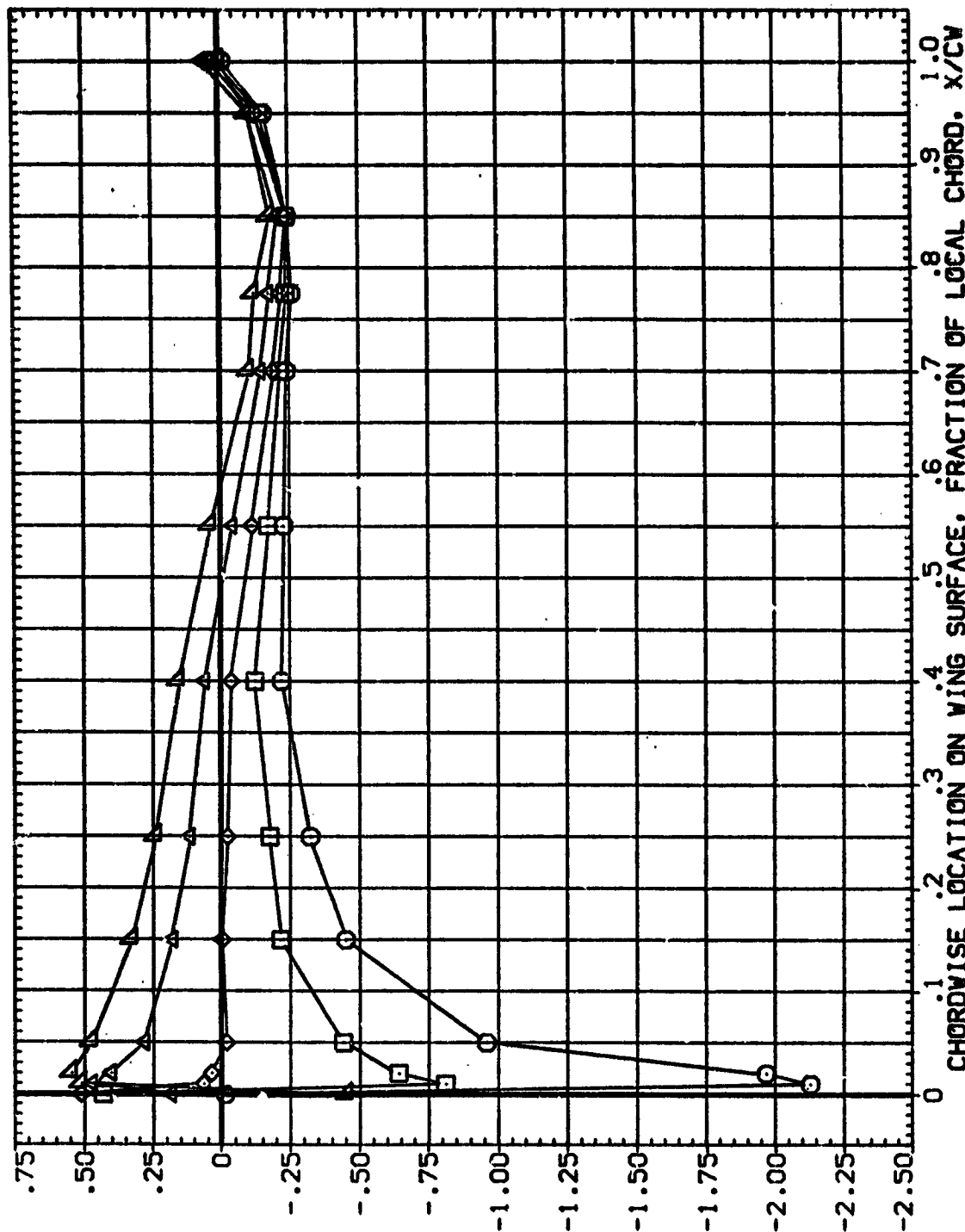


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(CA148) -140A/B/C/R ORB LEFT WING BOT(IE8L05)

SYMBOL	ALPHA	ZY/BN	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.887	-4.000	BDFLAP	.000
◇	.000			R-ELVN	.000
□	4.000				16.300
△	8.000				.000
▽	12.000				.600

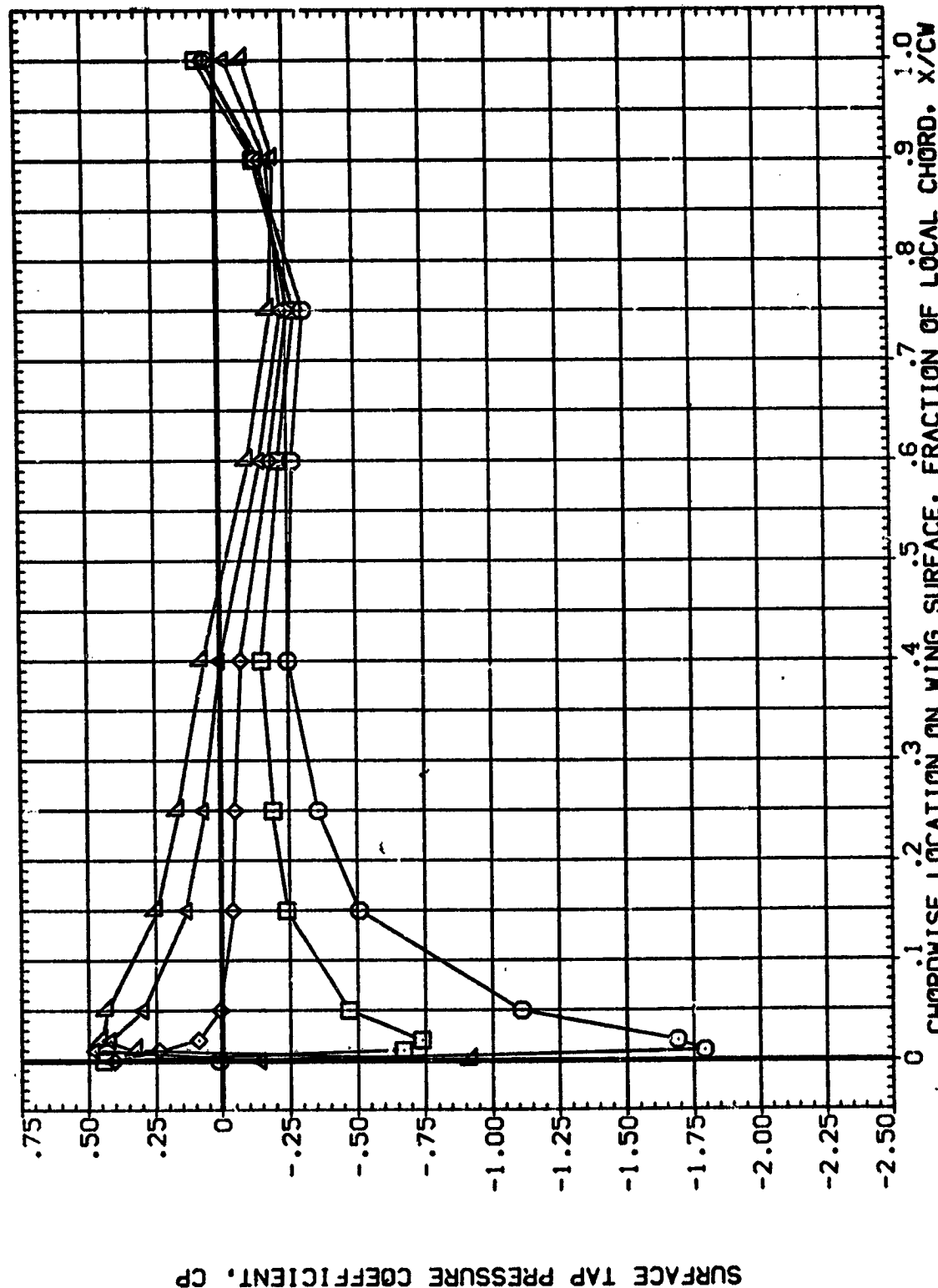


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L05)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V
 .972

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	SPDRK	SS
BDFLAP	.000	.000
R-ELVN	16.300	.000
	.000	.600

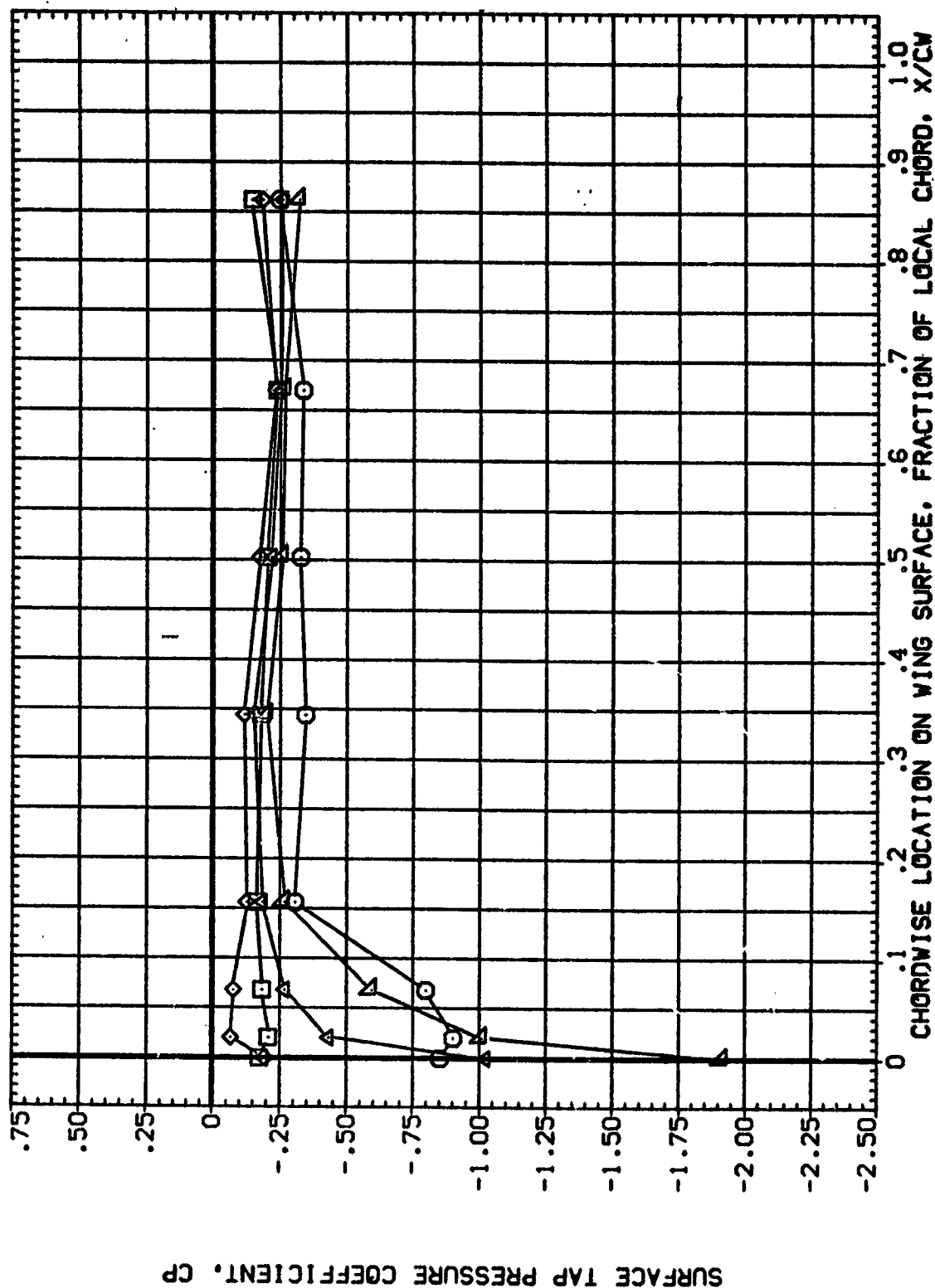


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

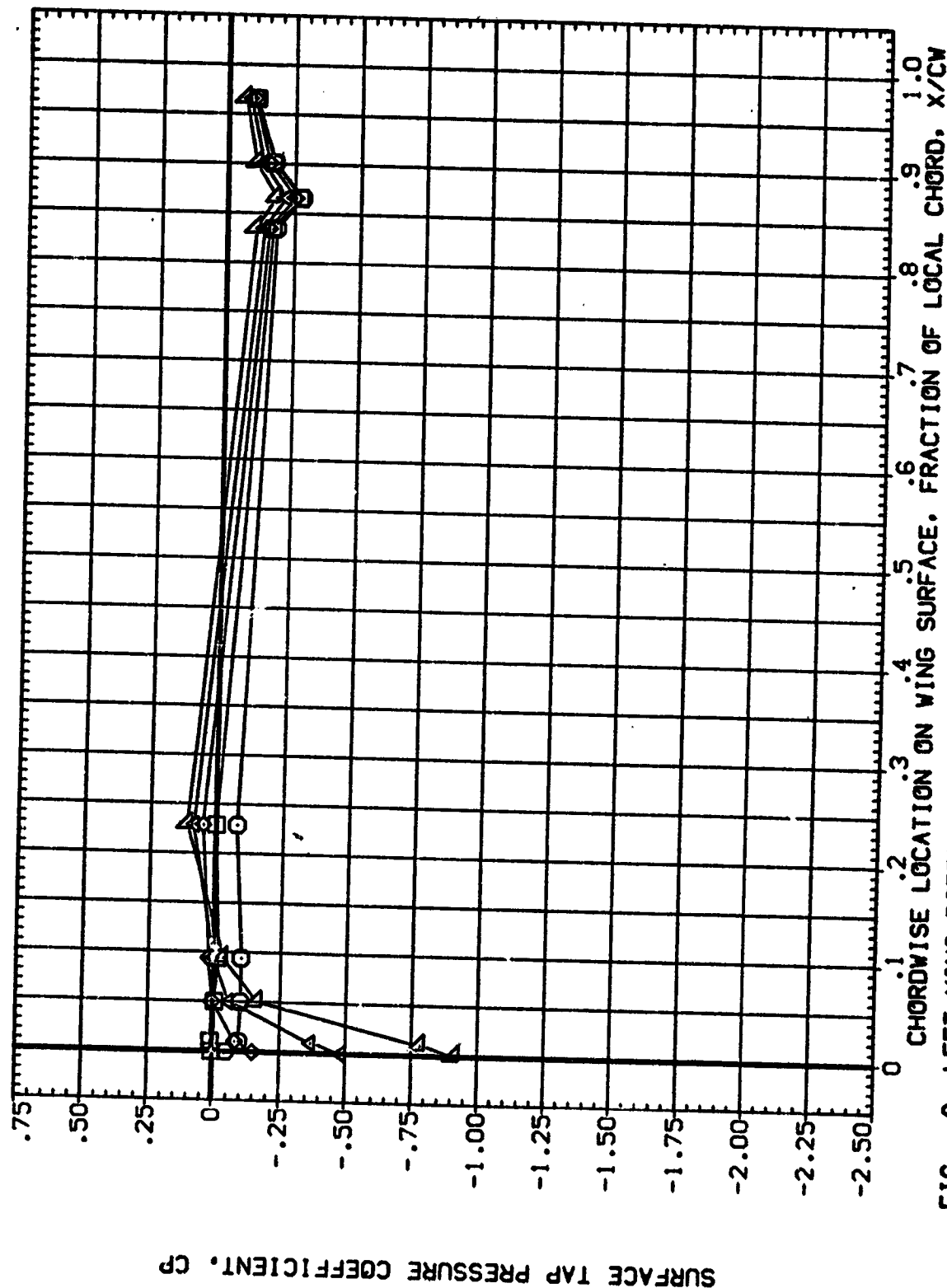
SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V .299

BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BDFLAP 19.300 L-ELVN .000
 R-ELVN .000 MACH .600



AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .427

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRX
 L-ELVN
 MACH

55.000
 .000
 .600

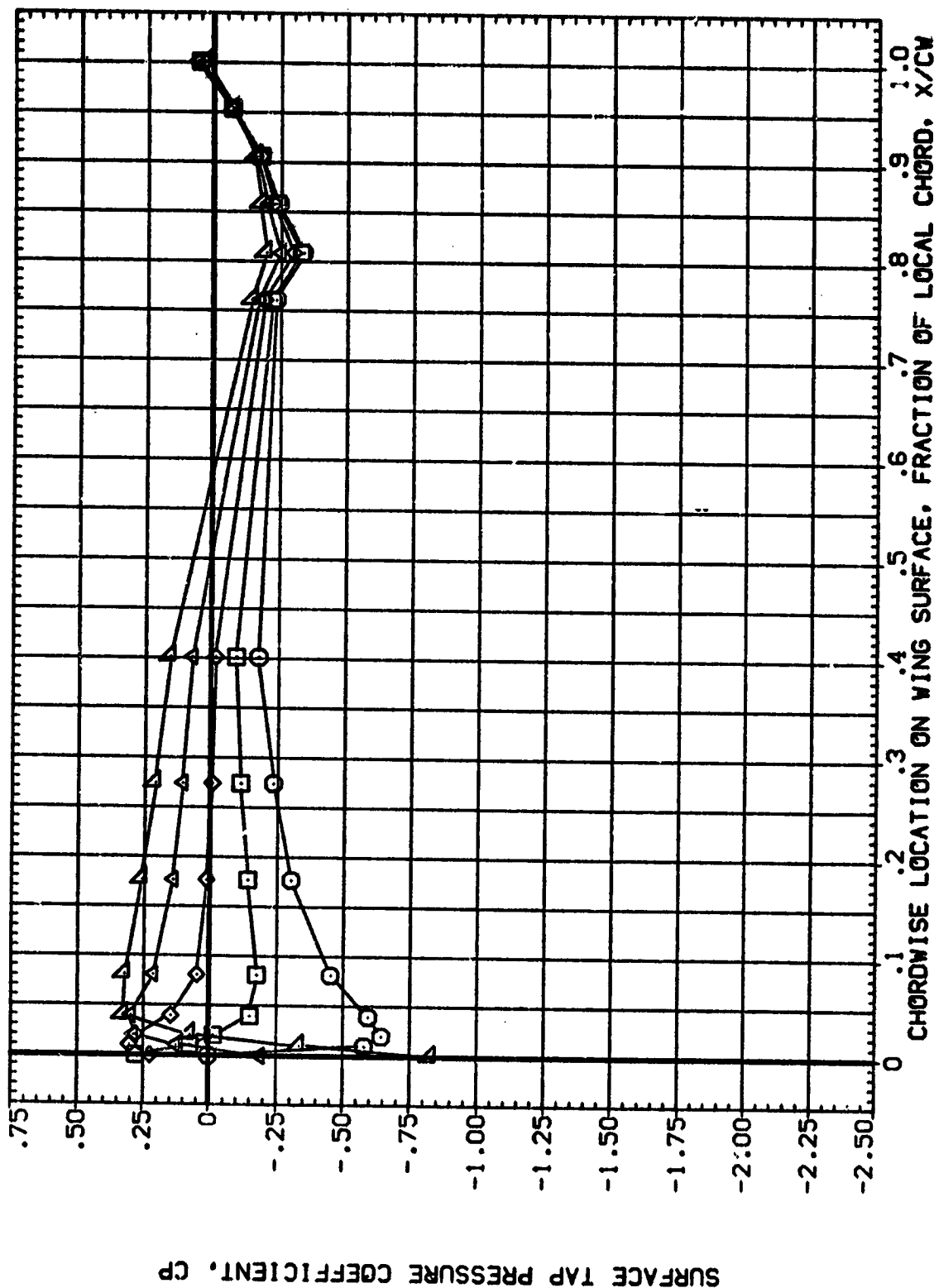


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-C73(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L05)

SYMBOL	ALPHA	2Y/8V	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.673	.000	BOFLAP	.000 SPOBRK
□	.000			R-ELVN	16.300 L-ELVN
◇	4.000				.000 MACH
△	8.000				.600
▽	12.000				

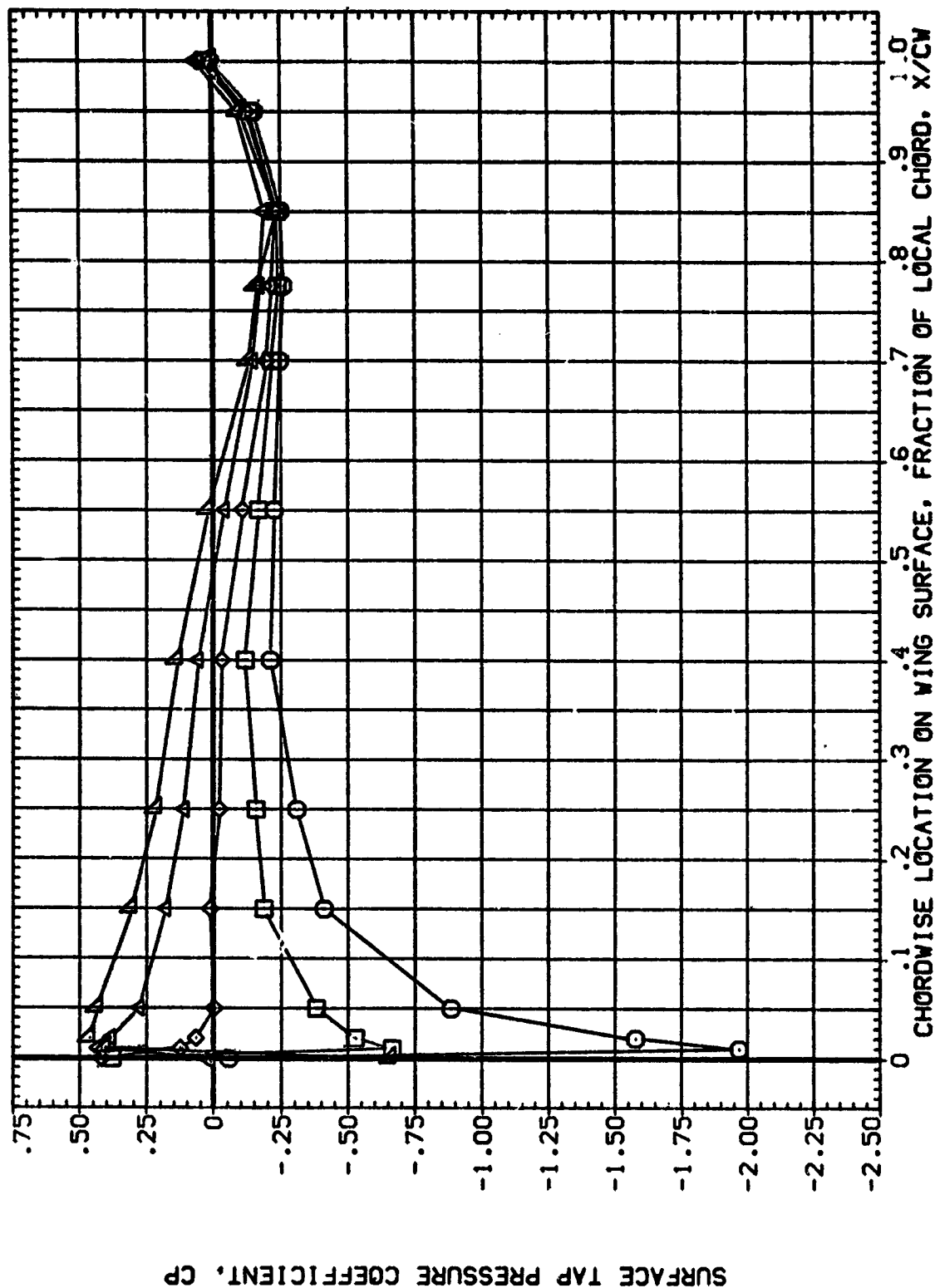


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL

ALPHA
-4.000
.000
4.000
8.000
12.000

ZV/BV BETA
.887 .000

RUDDER
80FLAP
R-ELVN

PARAMETRIC VALUES
.000 .000
16.300 L-ELVN
.000 MACH

55.000
.000
.600

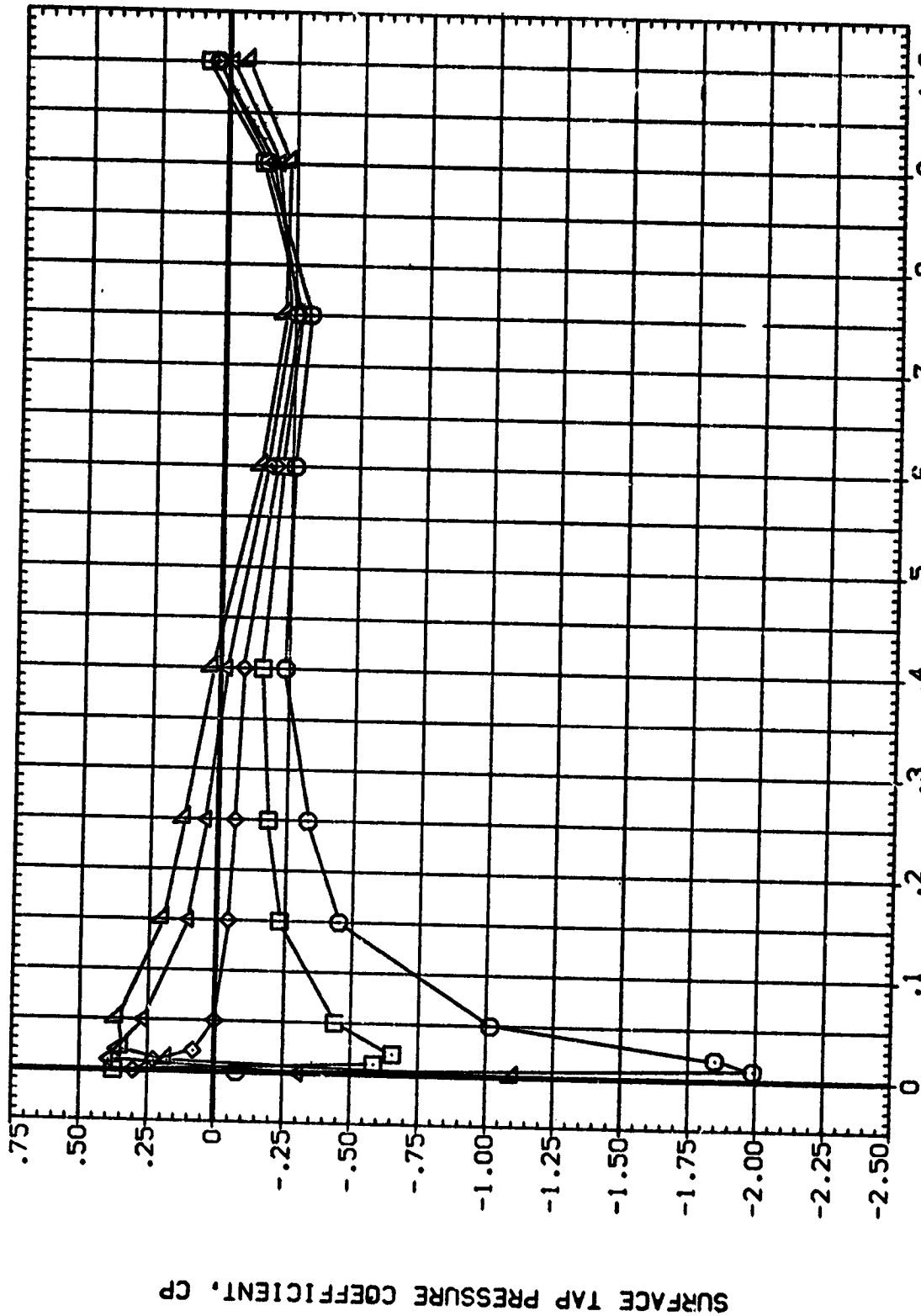


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) - 140A/B/C/R ORB LEFT WING BOT(IE8L05)

SYMBOL
□
◇
△

ALPHA
-4.000
.000
4.000
8.000
12.000

ZY/BV BETA
.972 .000

PARAMETRIC VALUES
RUDDER .000 S/DERRK .000
BDFLAP 16.300 L-ELVN .000
R-ELVN .000 MACH .600

55.000
.000
.600

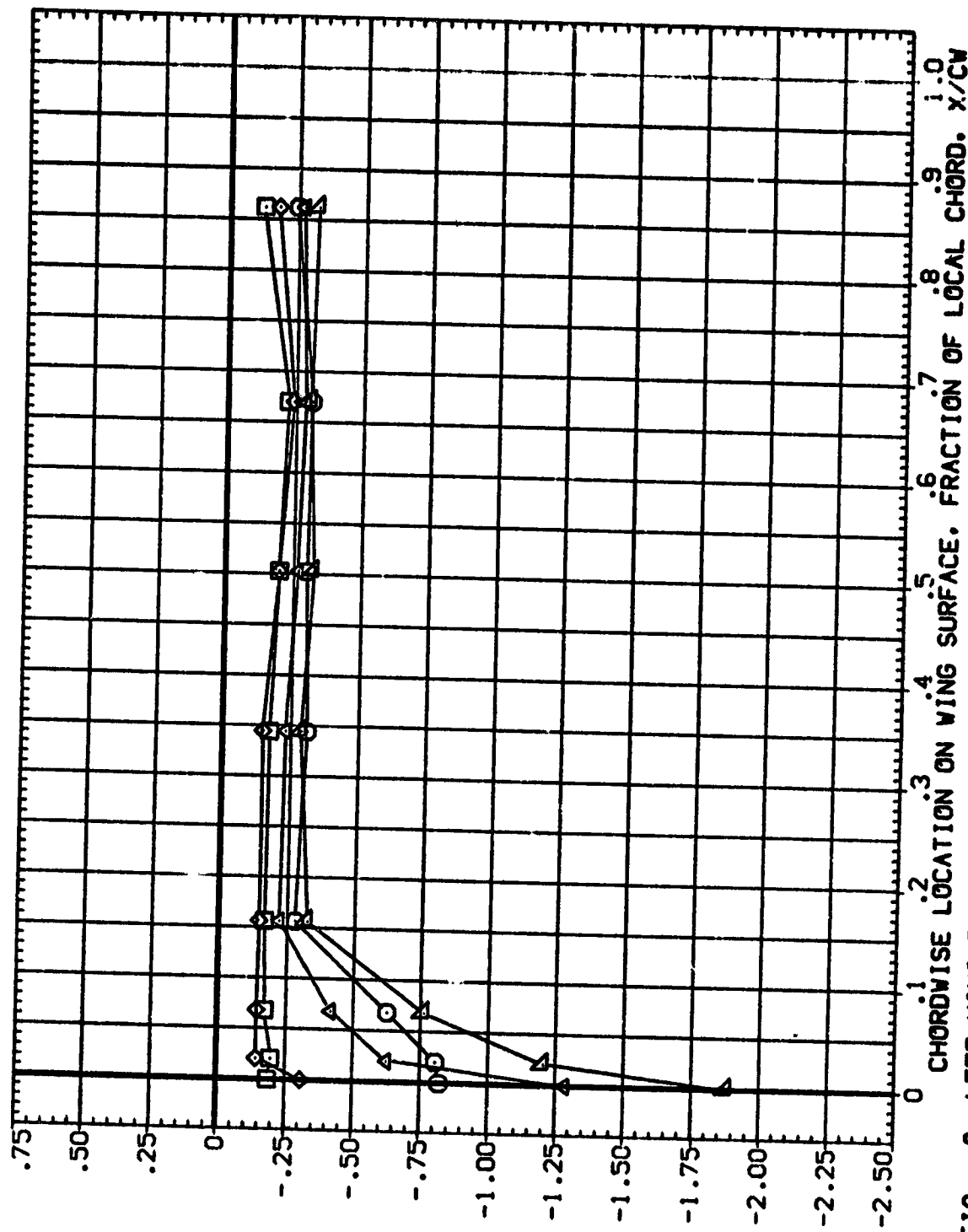


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/5/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .299

BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

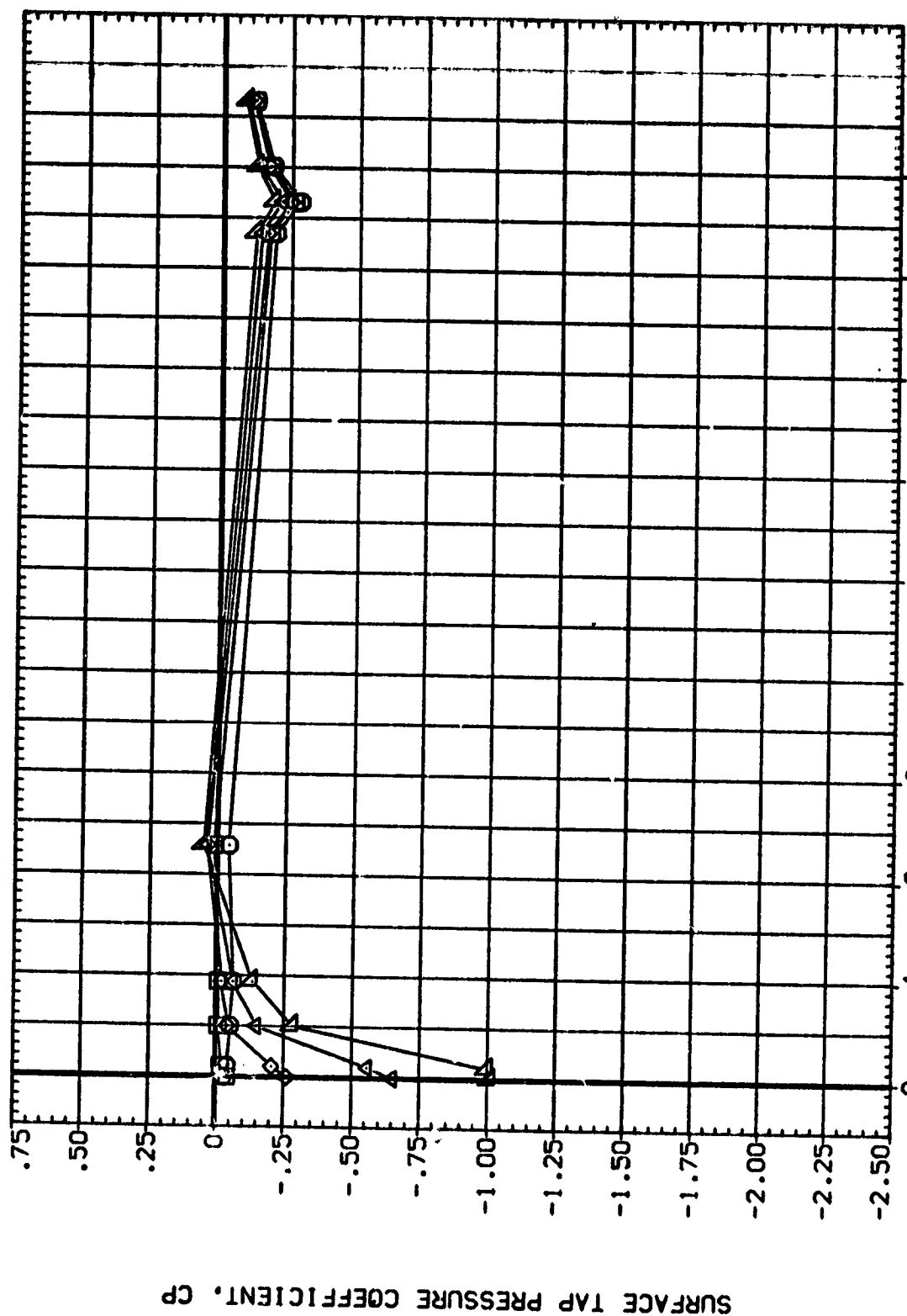


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2V/SN
 .427

BETA
 4.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPDRK
 16.300 L-ELVN
 .000 MACH
 55.000
 .000
 .600

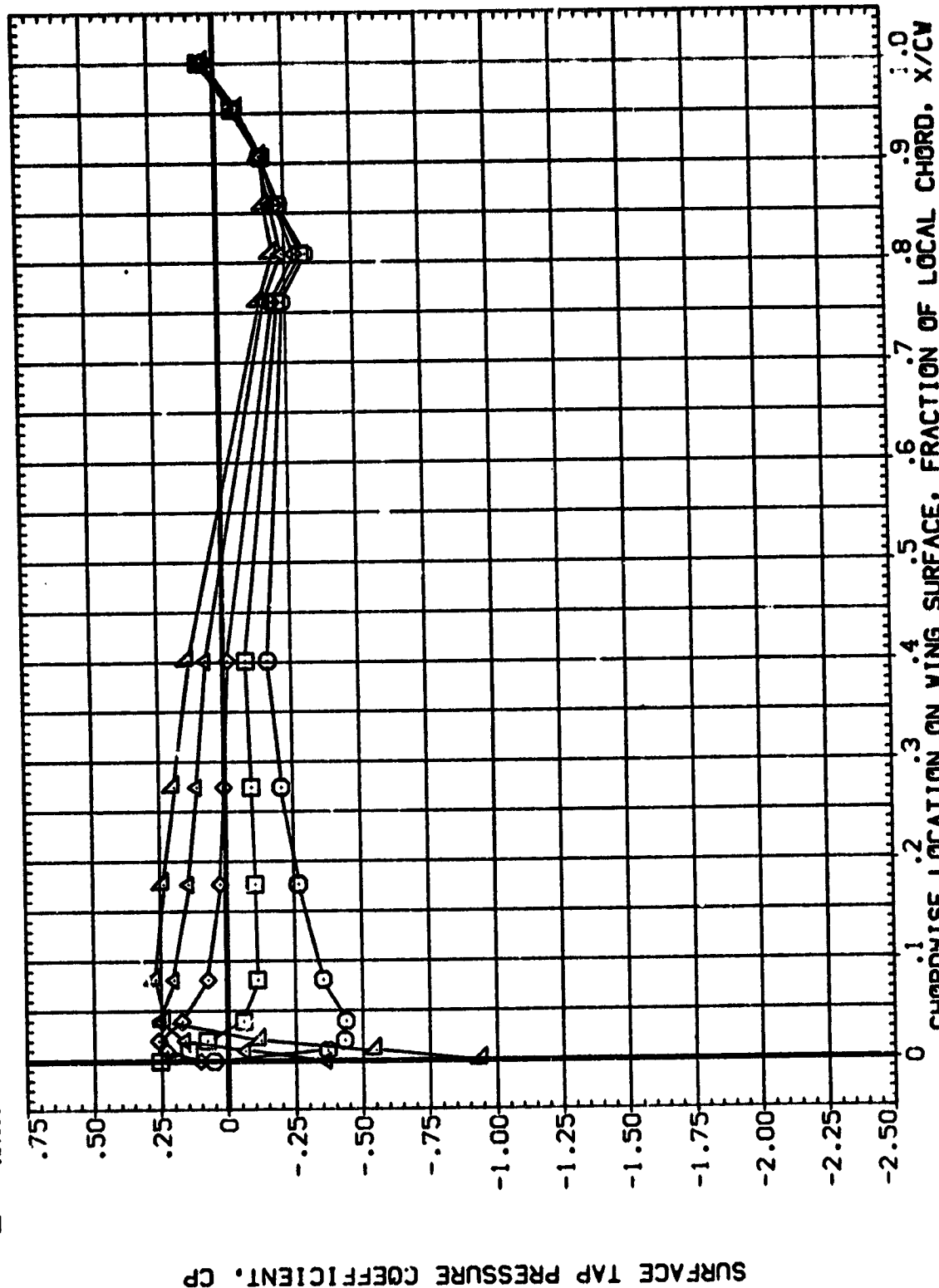


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 99.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

ALPHA 27/BN BETA
 -4.000 .673 4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◆ □ ○

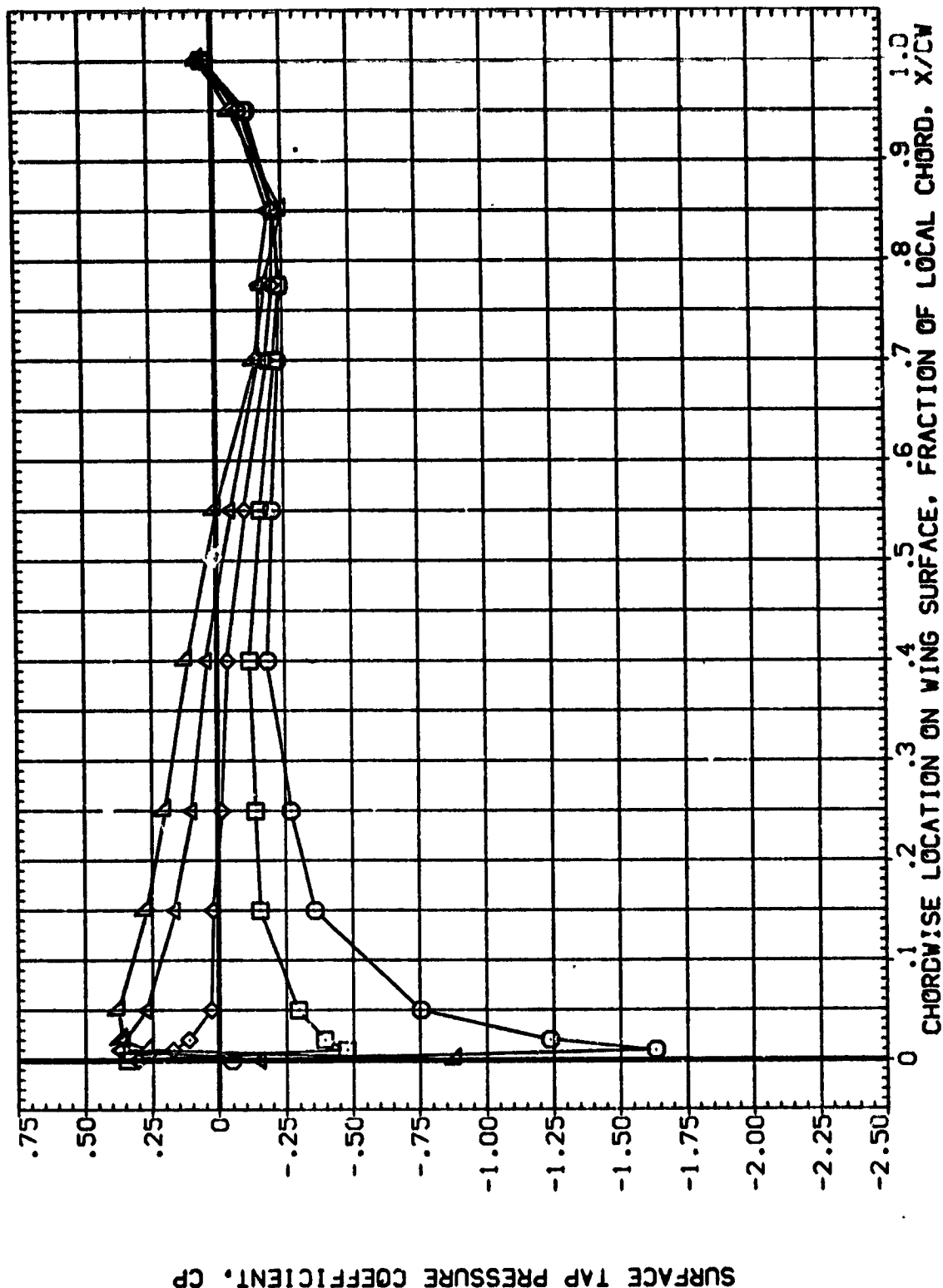


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2V/2W .887
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BOTLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .500

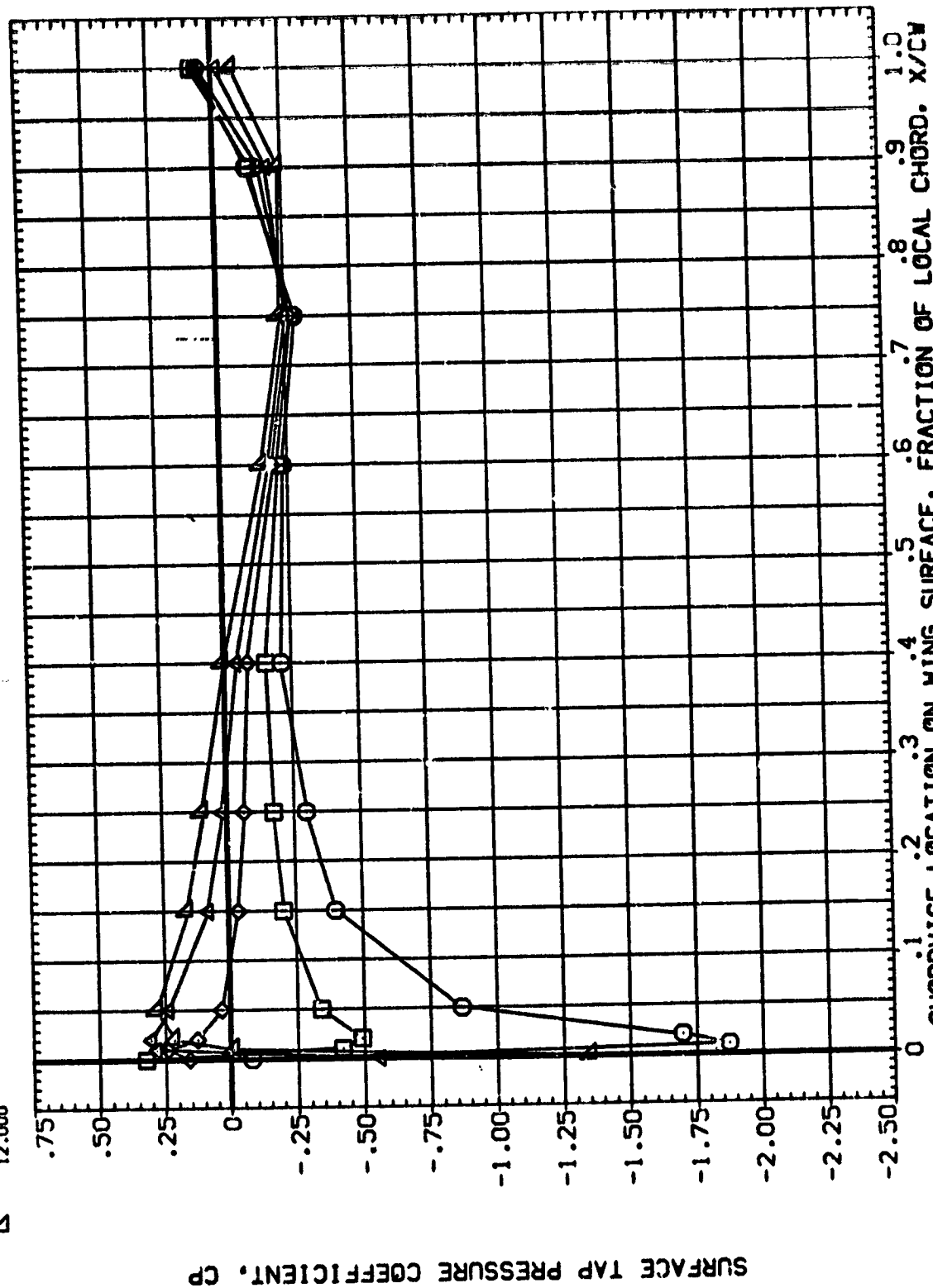


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .972

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDERX .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MAC .500

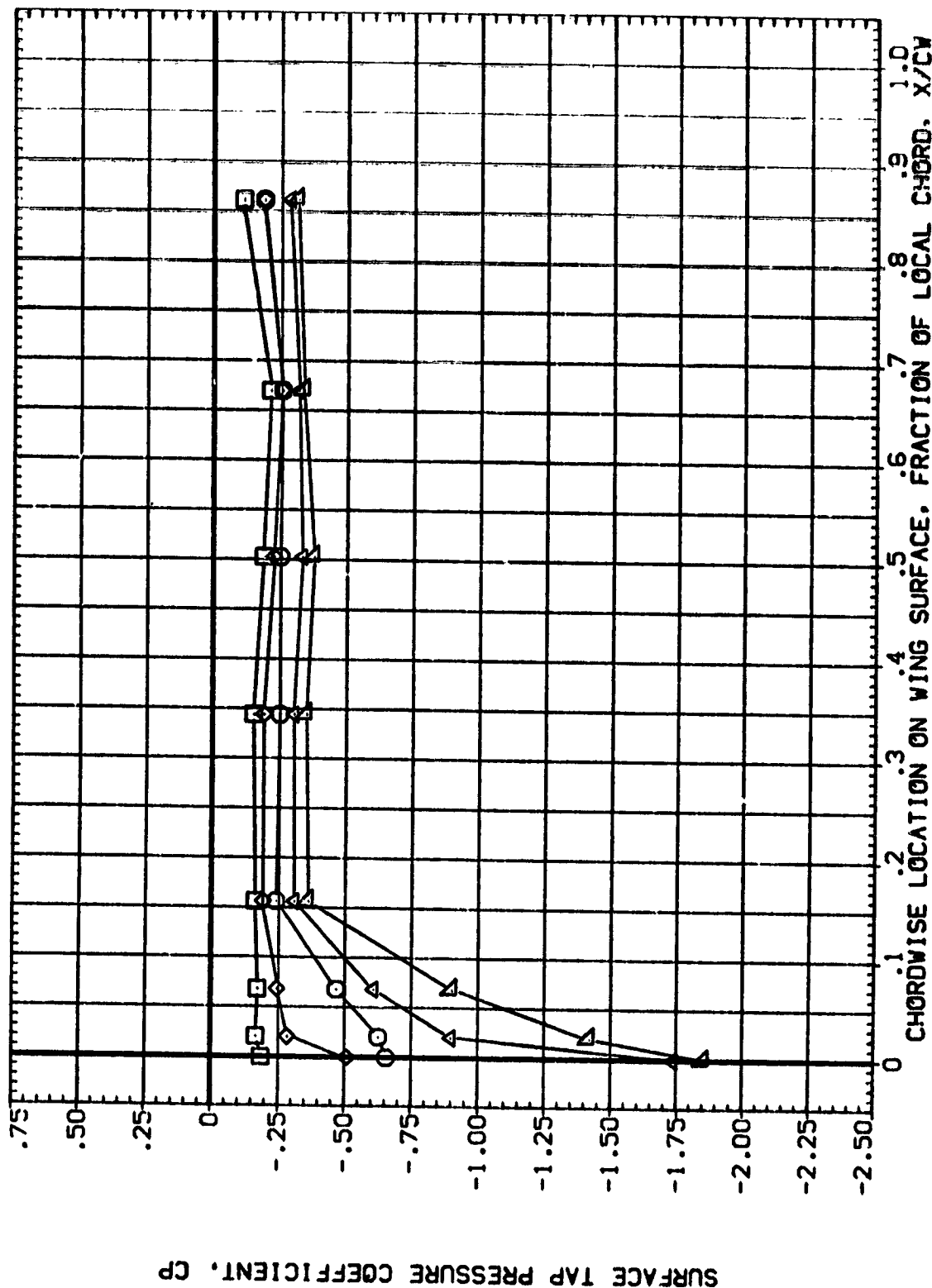


FIG. 9 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R/ORB LEFT WING BOT(1E8L05)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.299	8.000	BDFLAP	.000 S-CRIT
□	.000			R-ELVN	16.300 L-ELVN
◇	4.000				.000 MACH
△	8.000				.000
▽	12.000				.500

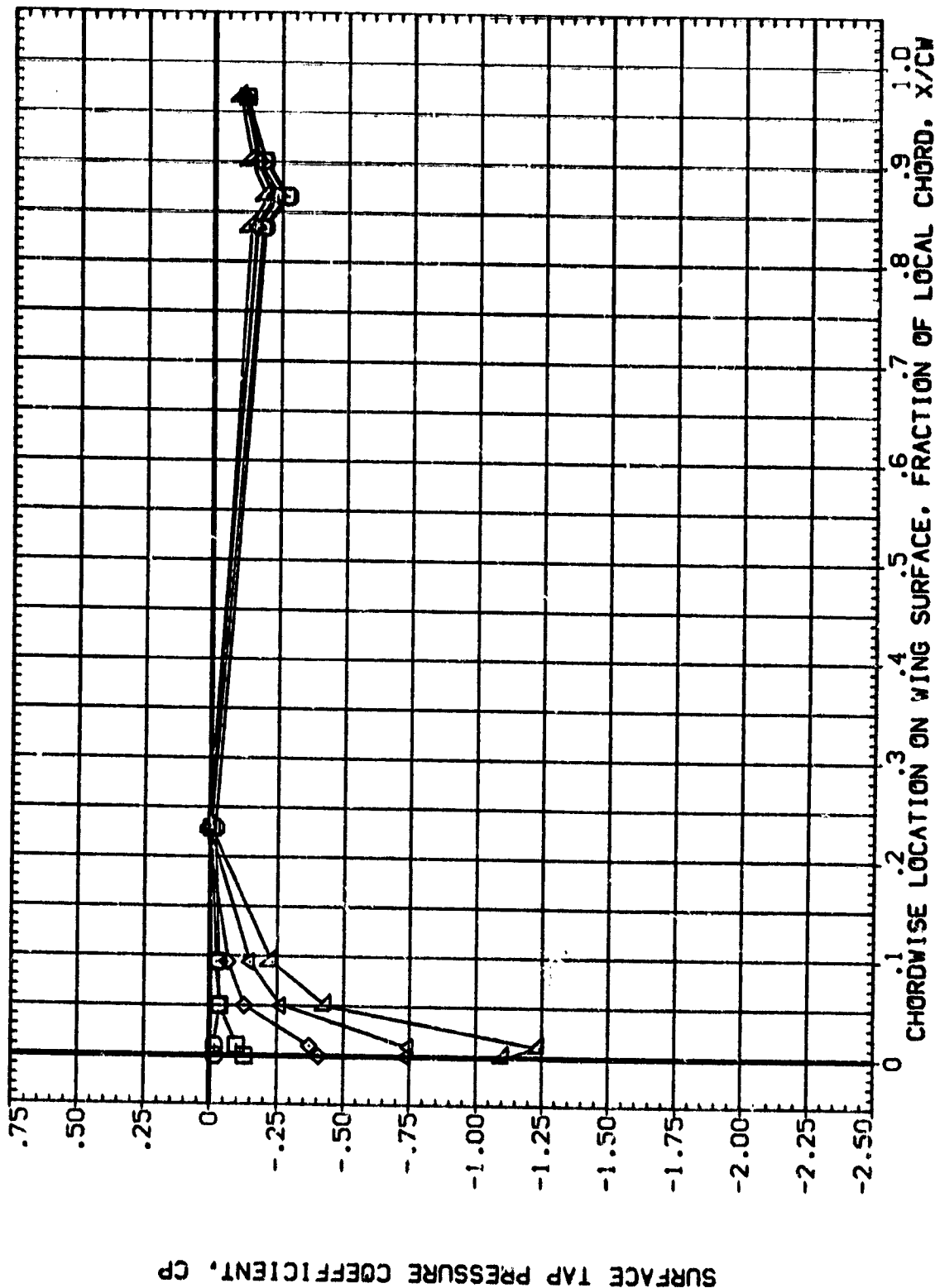


FIG. 9 LEFT WING BOTTOM SURFACE ELIVON DEFLECTION 0 DEGREES

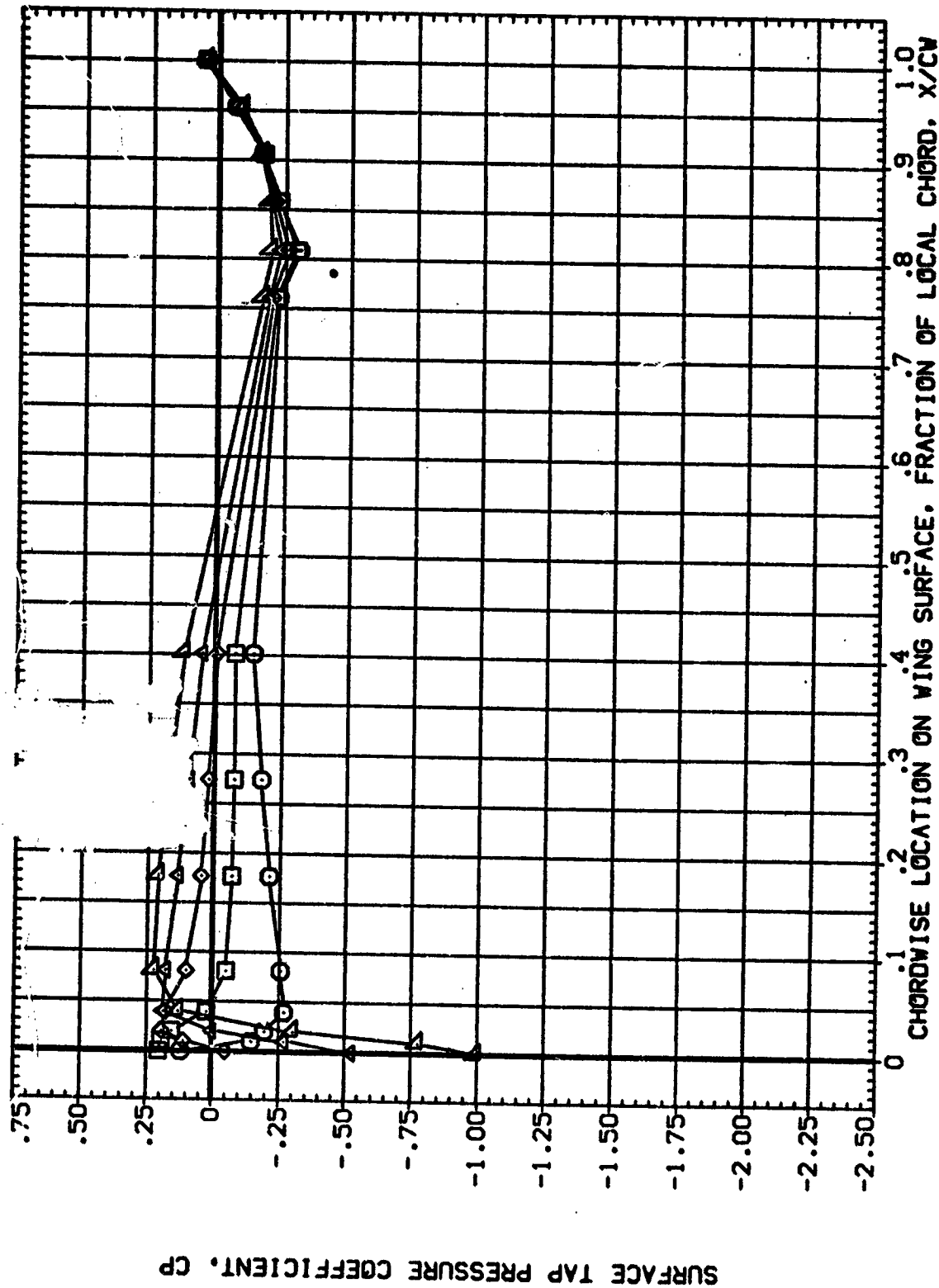
AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 □
 ◇
 △
 ▲

ALPHA
 .4,000
 .000
 4.000
 8.000
 12.000

2Y/BN .427
 BETA 8.000

PARAMETRIC VALUES
 RIDGER .000
 %SL 16.000
 R-ELVN .000
 L-ELVN .000
 MICH .600



AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

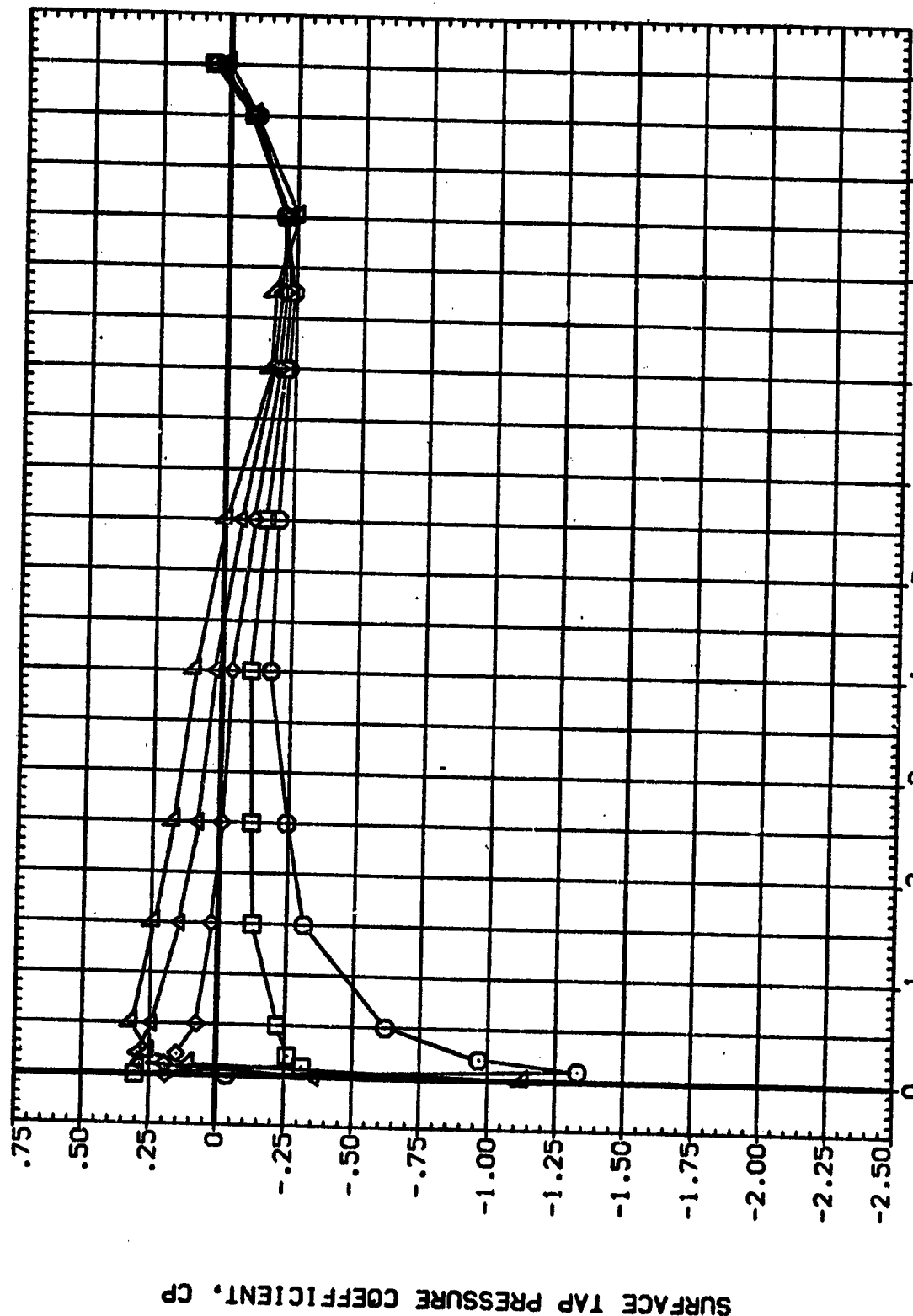
SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .673

BETA
 8.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN
 .000
 16.300
 .000
 .000
 .000
 .600



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
 ▽
 ◇
 □
 ◻

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V .887
 BETA 8.000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPOBRK 55.000
 16.300 L-ELVN .000
 .300 MACH .600

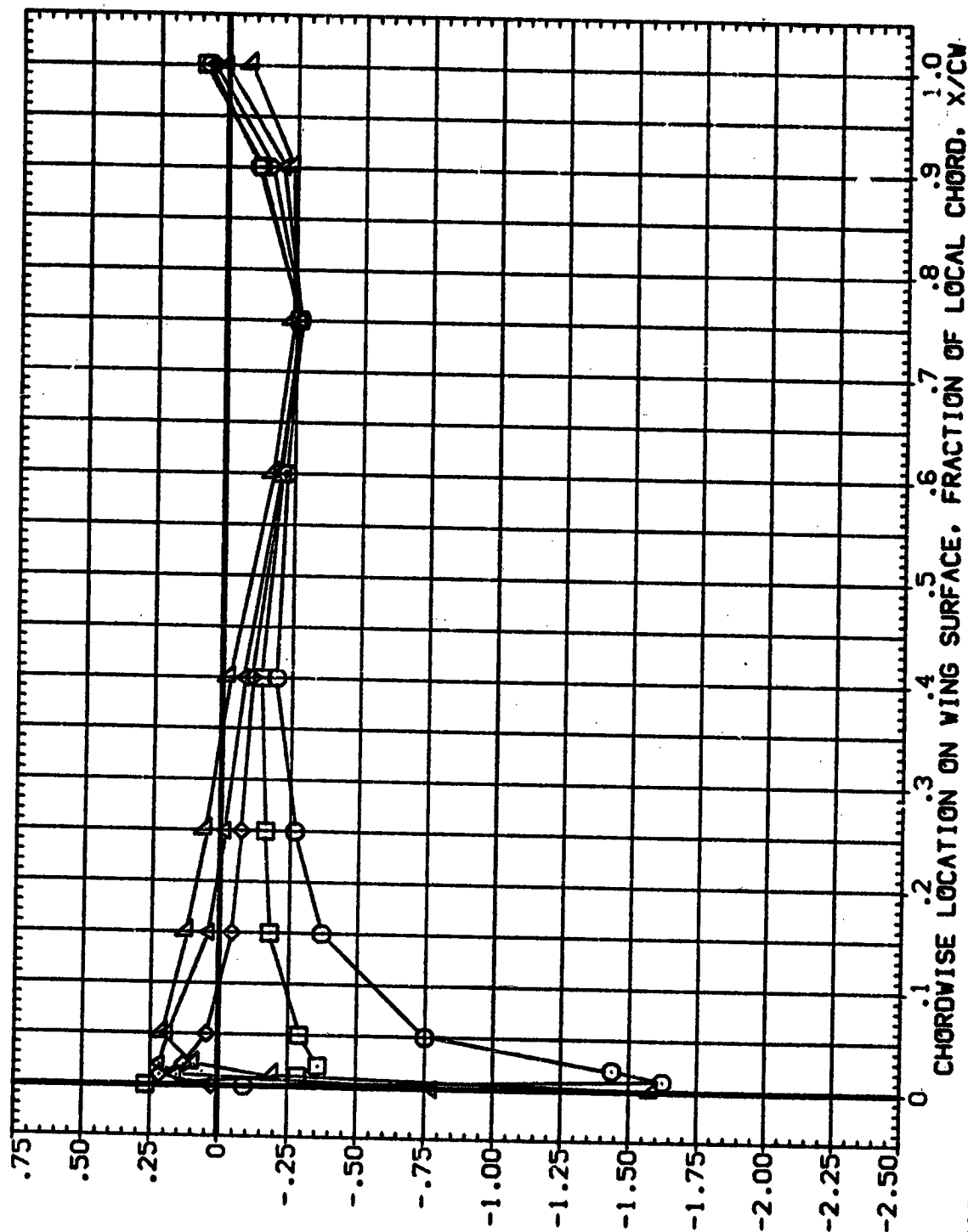


FIG. 9 LEFT WING BOTTOM SURFACE ELEVN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L05)

SYMBOL
□ ◇ △

ALPHA 2Y/8N BETA
-4.000 .972 8.000
.000
4.000
8.000
12.000

PARAMETRIC VALUES
RUDDER .000 SPOBRK .000
BOFLAP 16.300 L-ELVN .000
R-ELVN .000 MACH .600

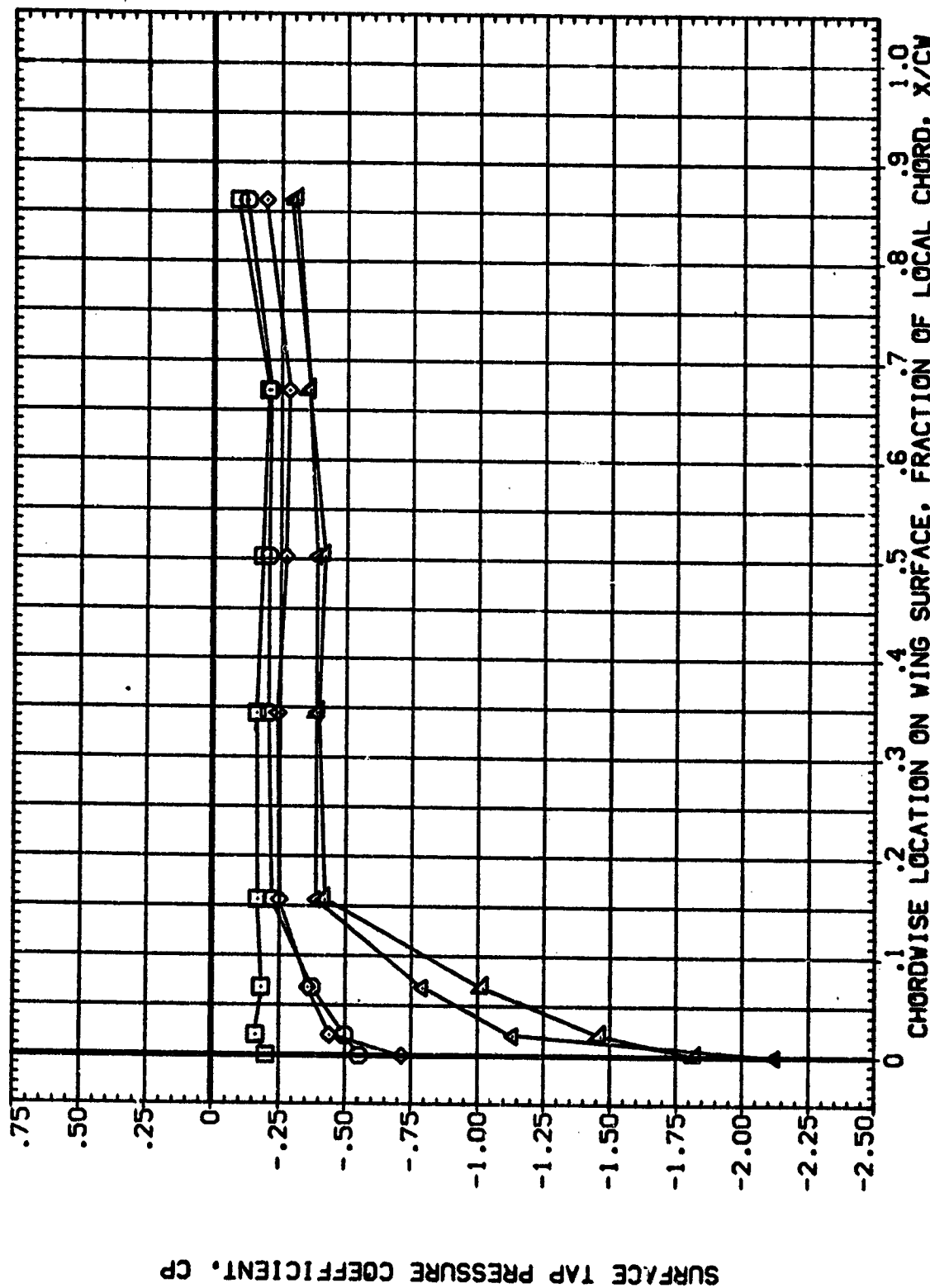


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L04)

SYMBOL
 ▽
 ◻
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .289

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	SPDRK	55.000
BOFLAP	.000	
R-ELVN	16.300	
	.000	
	L-ELVN	.000
	MACH	.500

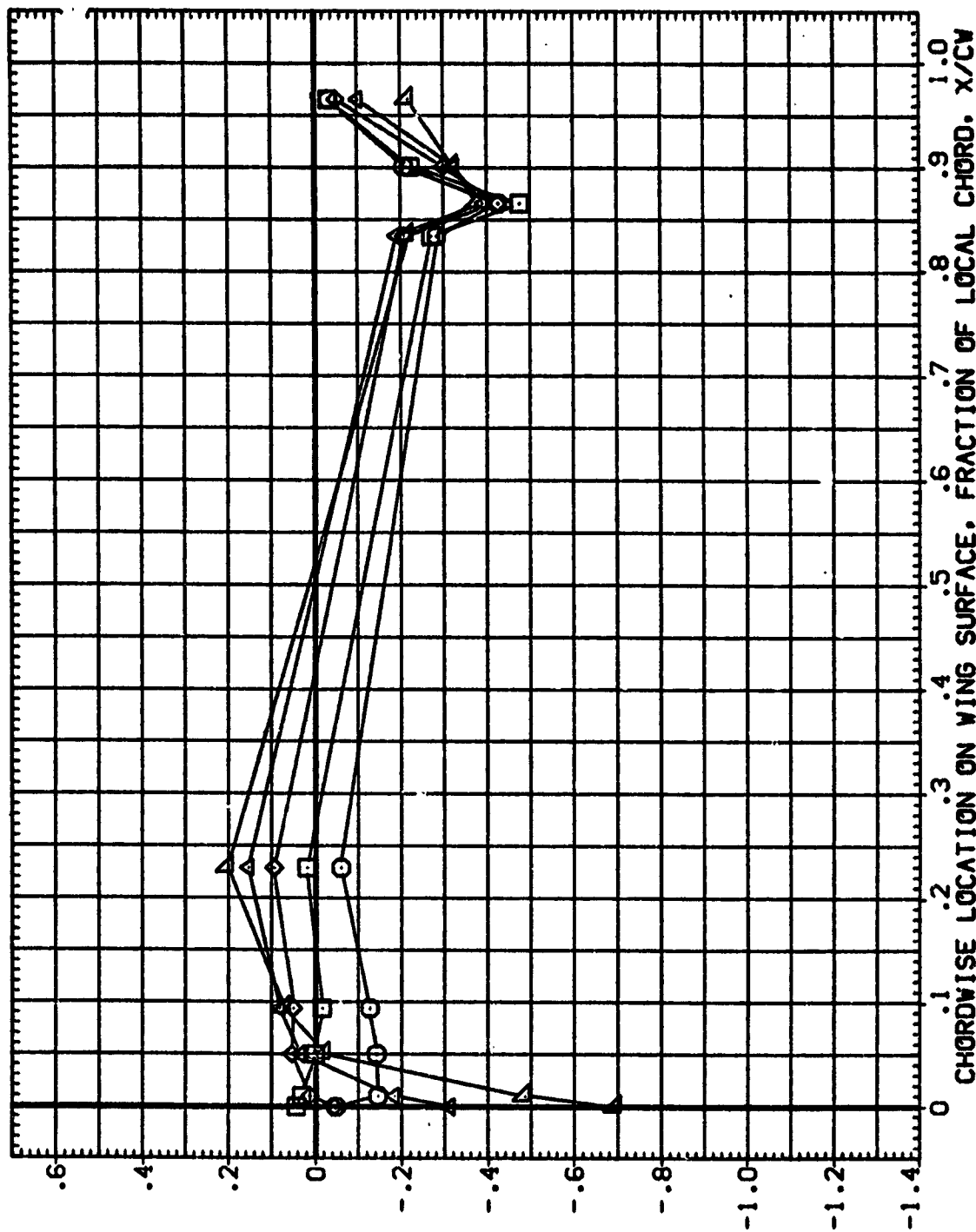


FIG. 9 LEFT WING BOTTOM SURFACE ELEVN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L04)

SYMBOL	ALPHA	2V/8s	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.427	-4.000	80FLAP	.000 SPDRK 55.000
□	.000			R-ELVN	.000 L-ELVN .000
◇	4.000				.000 MACH .900
△	8.000				
▽	12.000				

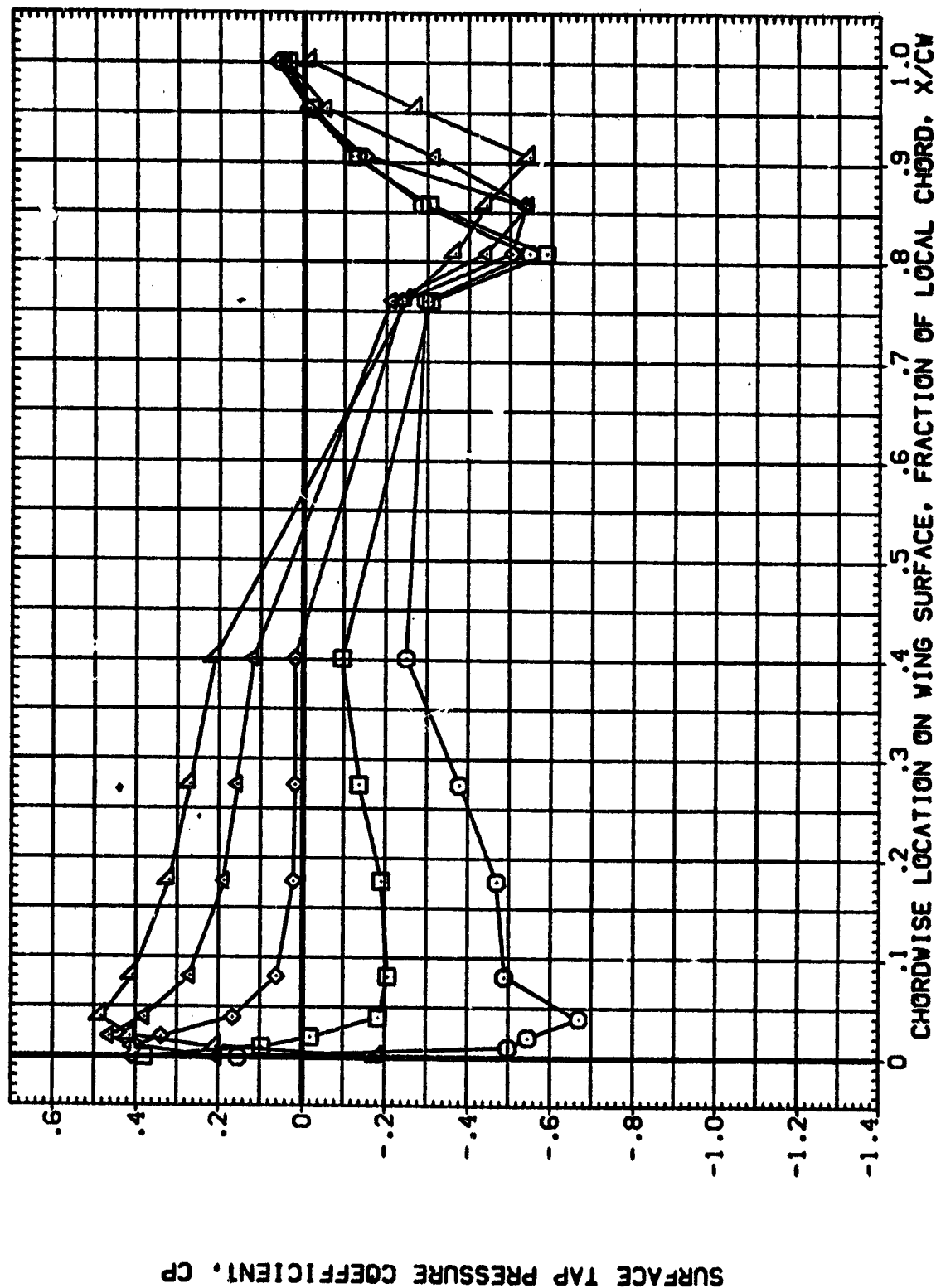


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L04)

SYMBOL
 ◻ ◊ ◴ ◴

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZI/BN
 .673

BETA
 -4.000

RUDER
 BOTFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SP08RX
 16.300 L-ELVN
 .000 MACH
 .900

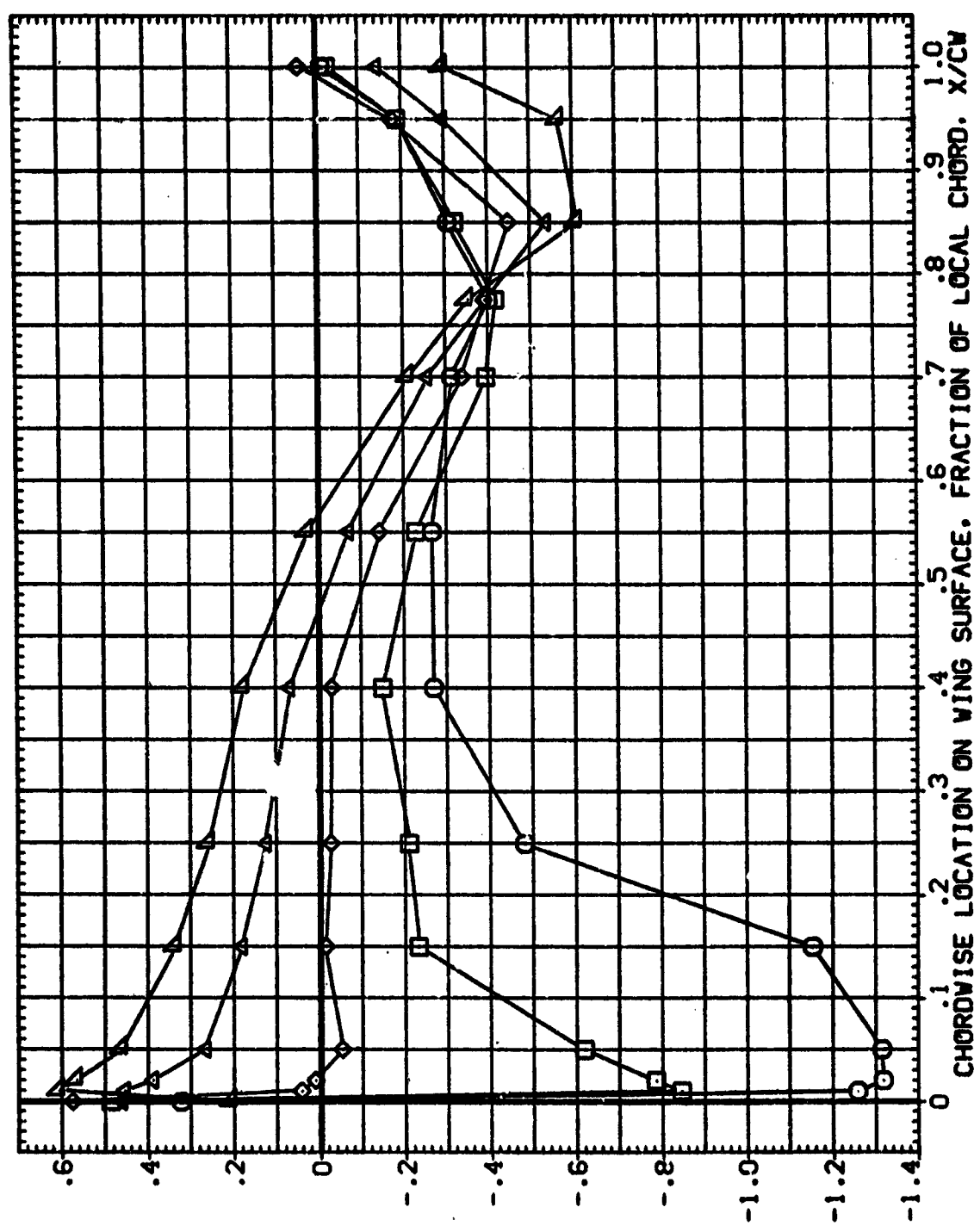


FIG. 9 LEFT WING BOTTOM SURFACE ELEVN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L04)

SYMBOL	ALPHA	2V/BV	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRBK	L-ELVN	MACH
▽	-4.000	.987	-4.000					.000		.99.000
◇	.000							.000		.000
□	4.000							.000		.500
△	8.000							.000		.500
▽	12.000							.000		.500

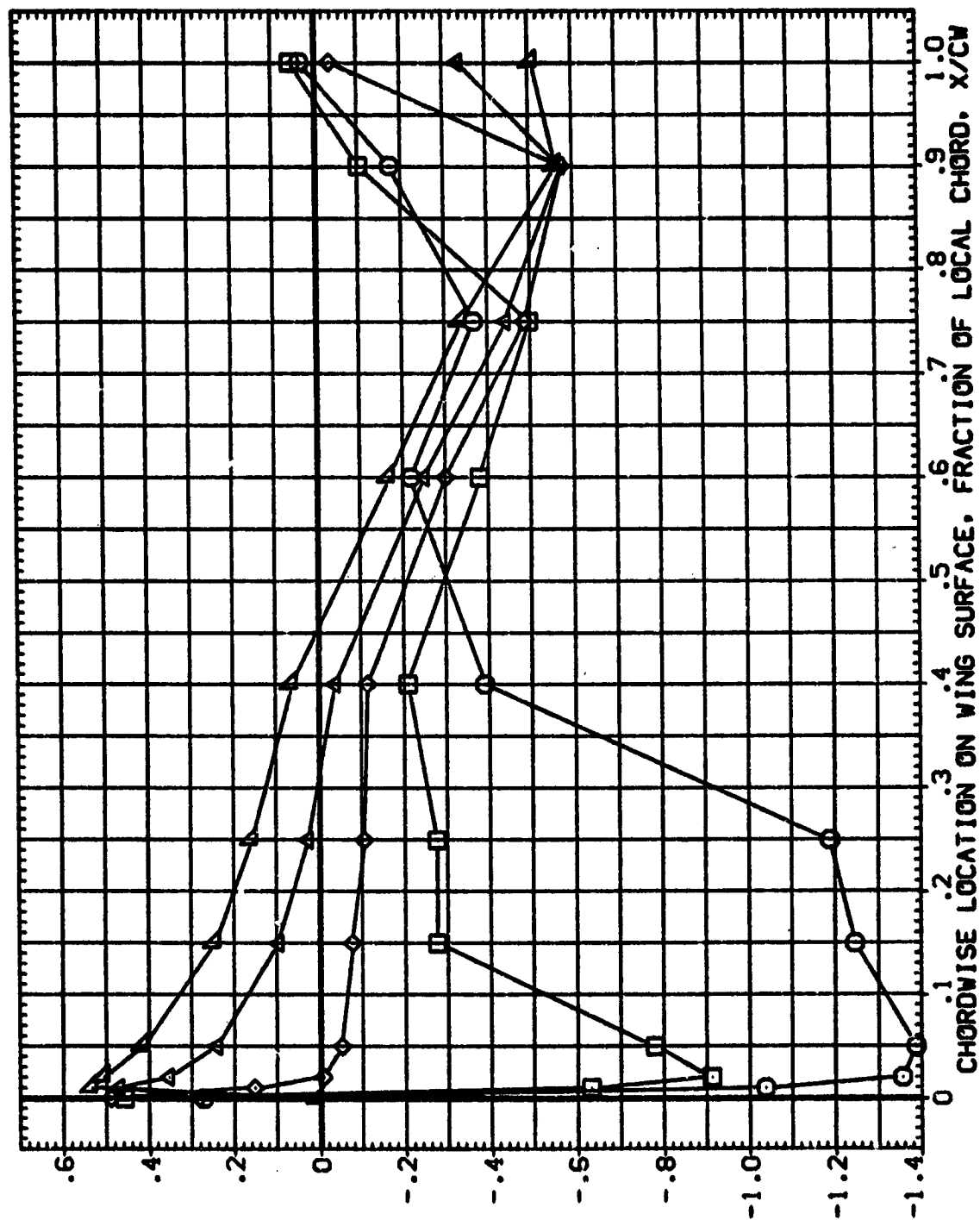
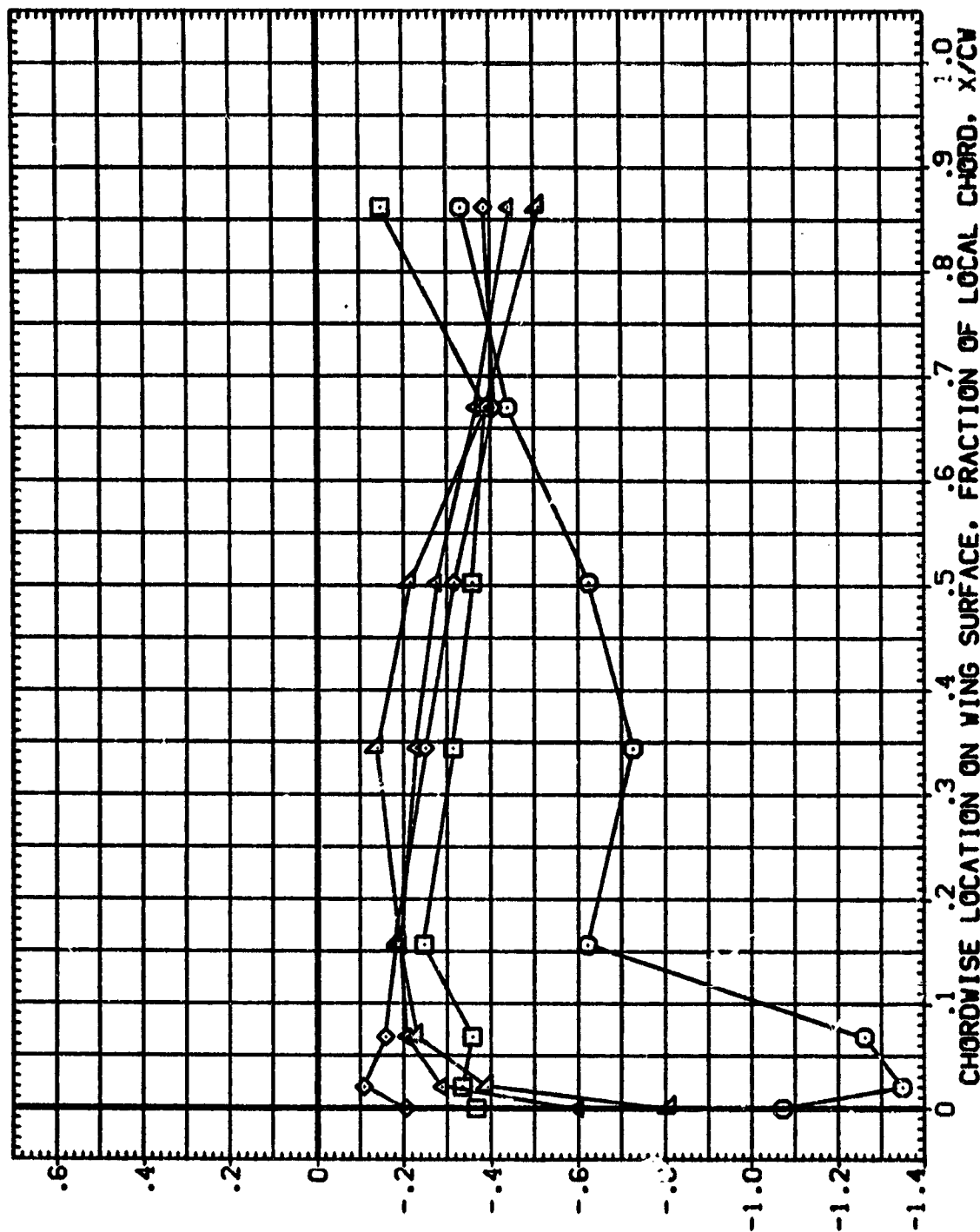


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L04)

PARAMETRIC VALUES
 RUDDER .000 SPOBRK .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 NACH .500

SYMBOL ALPHA 21/81 BETA
 -4.000 .972 -4.000
 .000
 4.000
 8.000
 12.000



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(3A148) -140A/B/C/R ORB LEFT WING BOT(1E8L04)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN
 .000
 .000
 .500

SPDRK
 L-ELVN
 .000
 .500

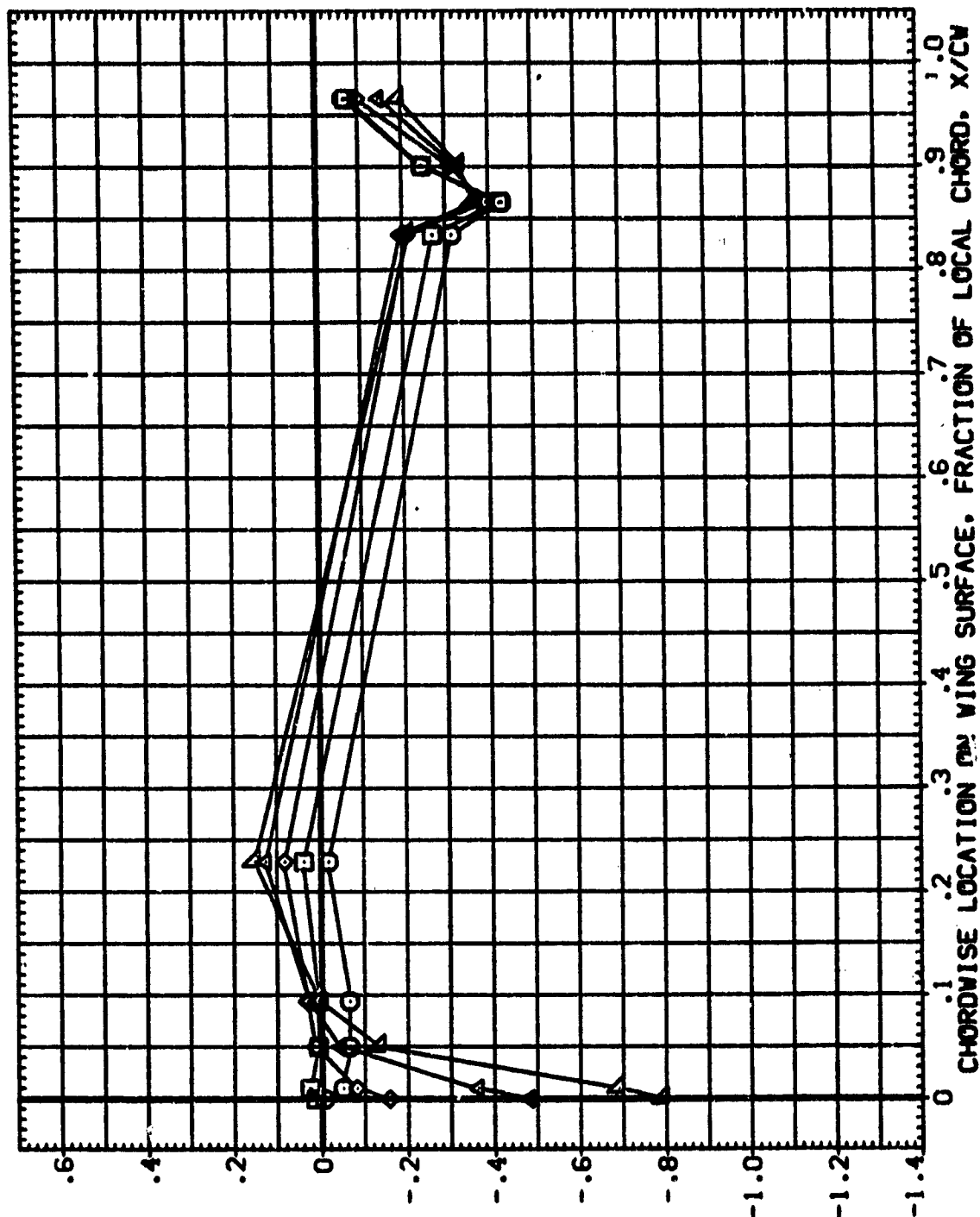


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB LEFT WING BOT(IE8LD4)

PARAMETRIC VALUES
 .000 SPDRWK 55.000
 16.300 L-ELVN .000
 .000 MACH .300

RUEJER
 BDFLAP
 R-ELVN

27/BN .427
 BETA .000

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ○
 △

SURFACE TAP PRESSURE COEFFICIENT, CP

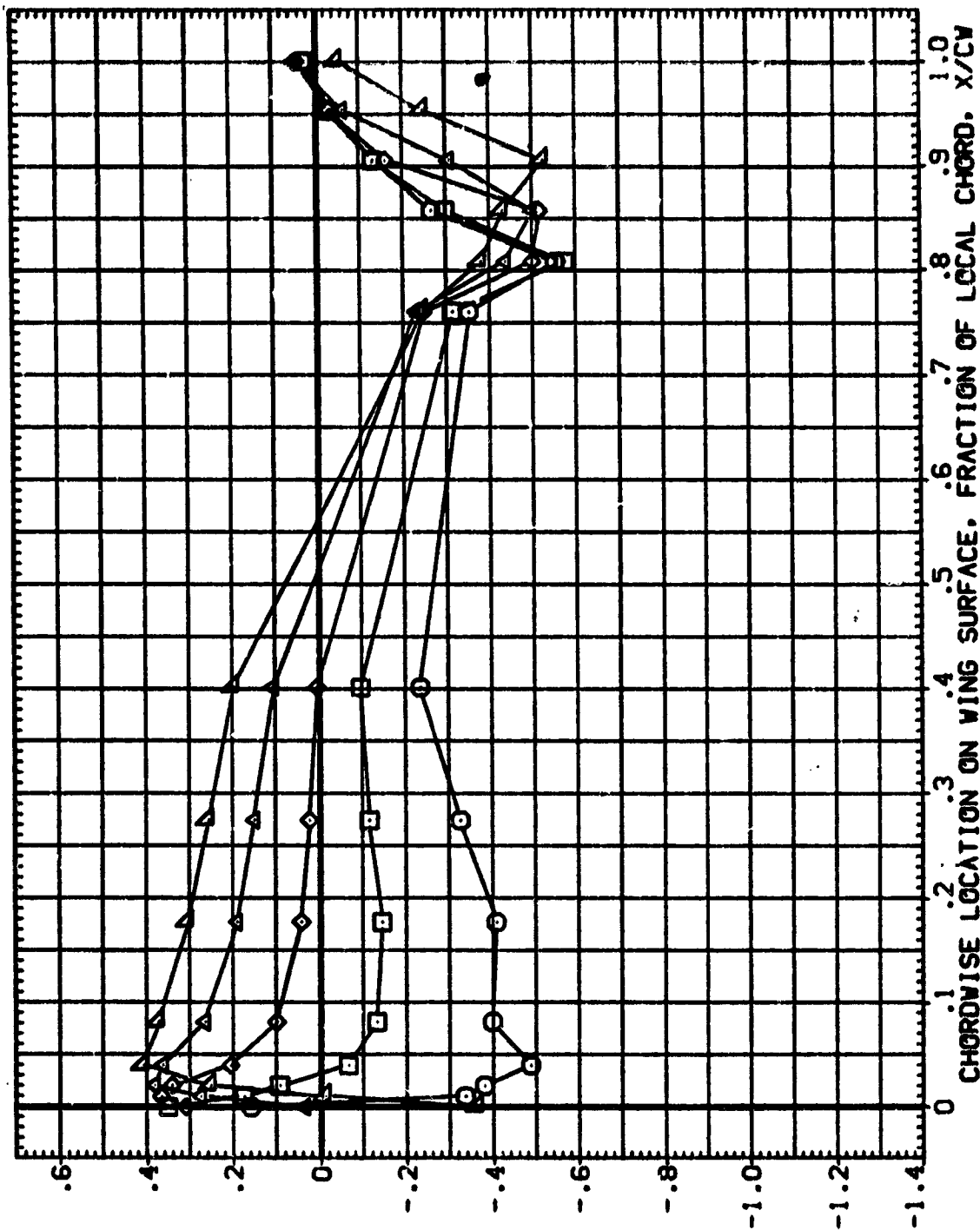


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L04)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRK	L-ELVN	MACH
▽	-4.000	.673	.000					.000	.000	.500
◇	.000							.000	.000	
□	4.000							.000	.000	
◇	8.000							.000	.000	
△	12.000							.000	.000	

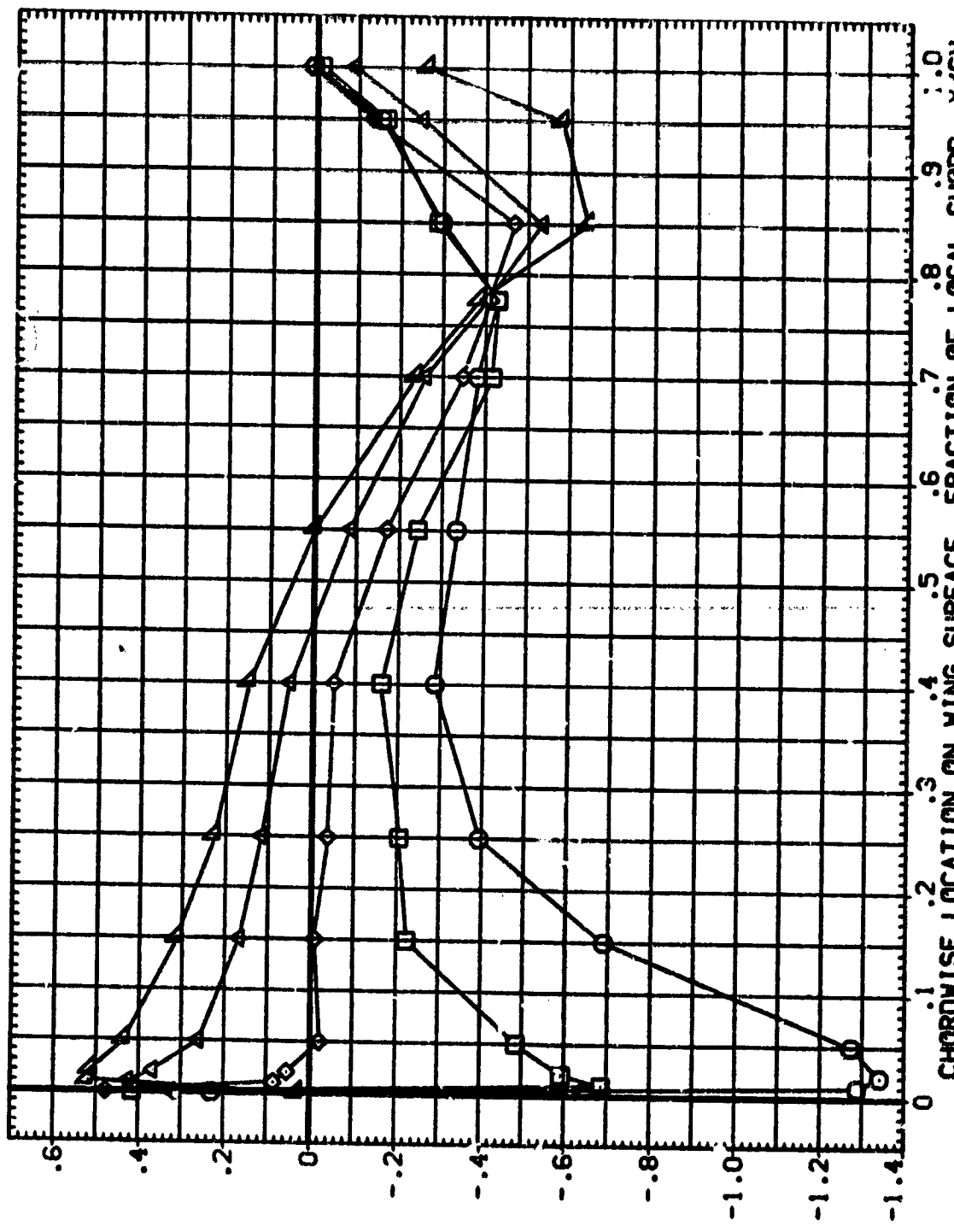


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

ALPHA	21/2N	BETA
-4.000	.087	.000
.000		
4.000		
8.000		
12.000		

PARAMETRIC VALUES	
RUDDER	.000
BOFLAP	16.300
R-ELVN	.000
	MACCH
	1-ELVN
	SP-SWK
	25.000
	.000
	.900

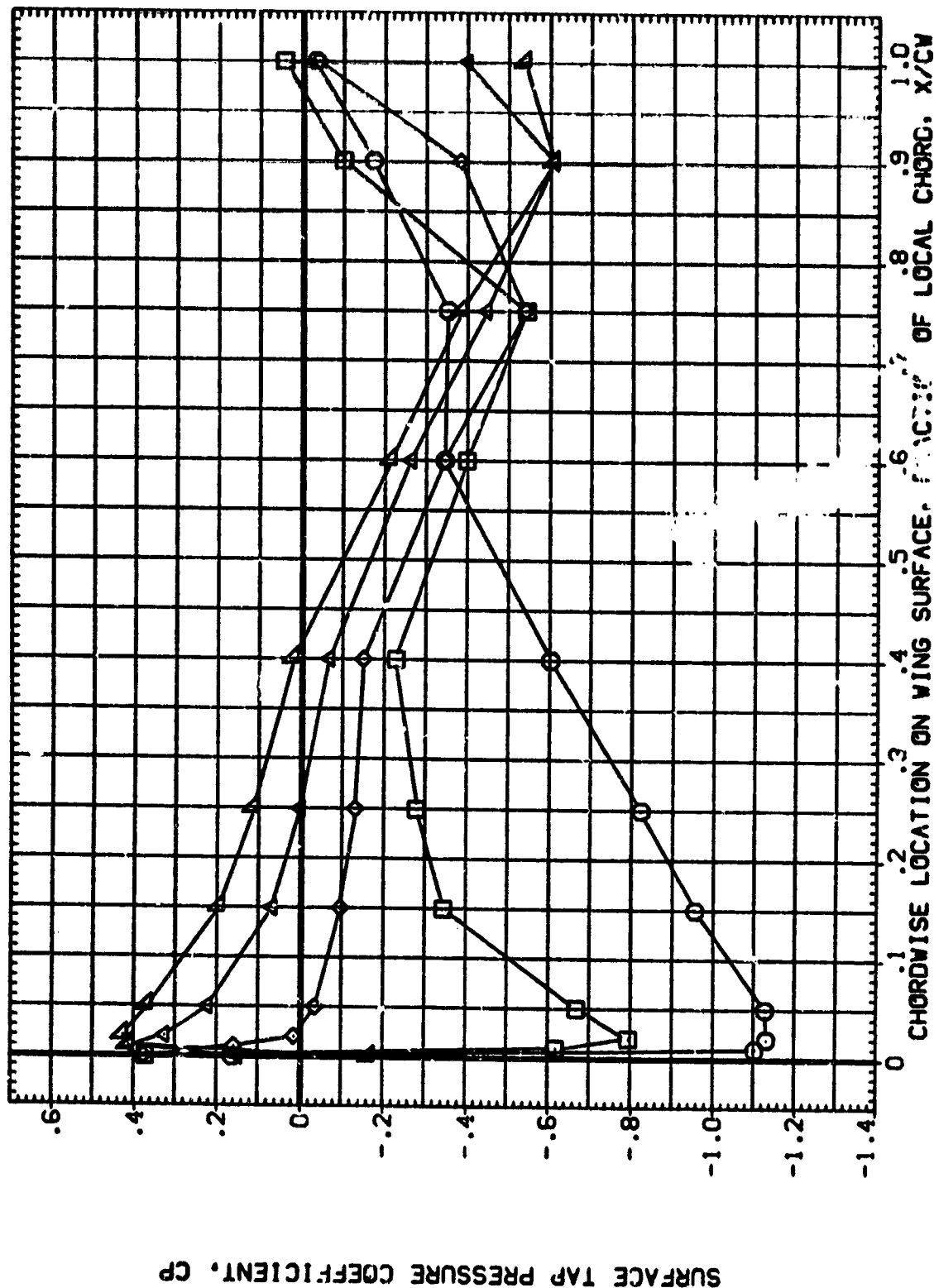


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L04)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BV
 .972

BETA
 .000

RUCDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

SPDRK
 L-ELVN
 MACH
 55.000
 .000
 .900

SURFACE TAP PRESSURE COEFFICIENT, CP

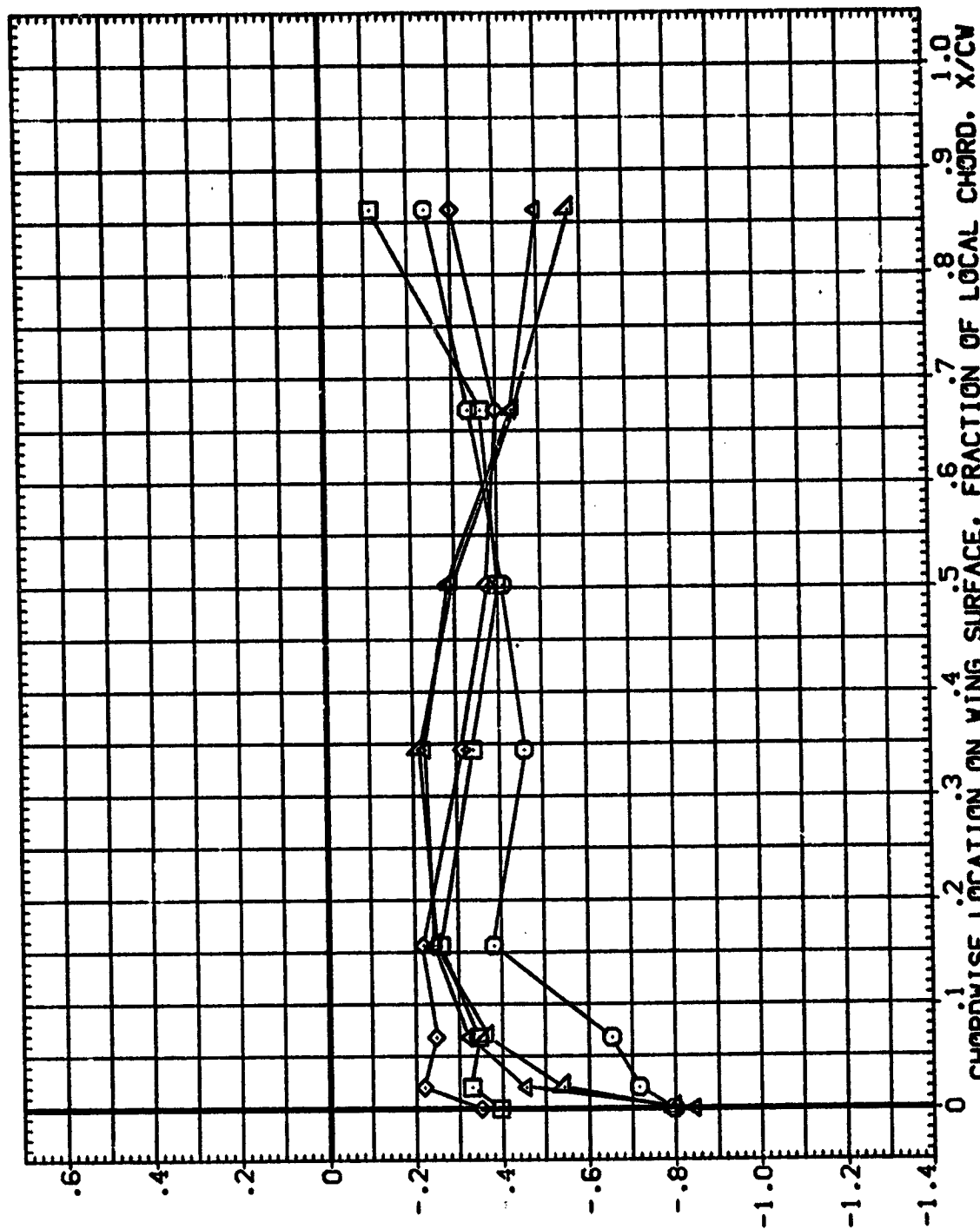


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L04)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

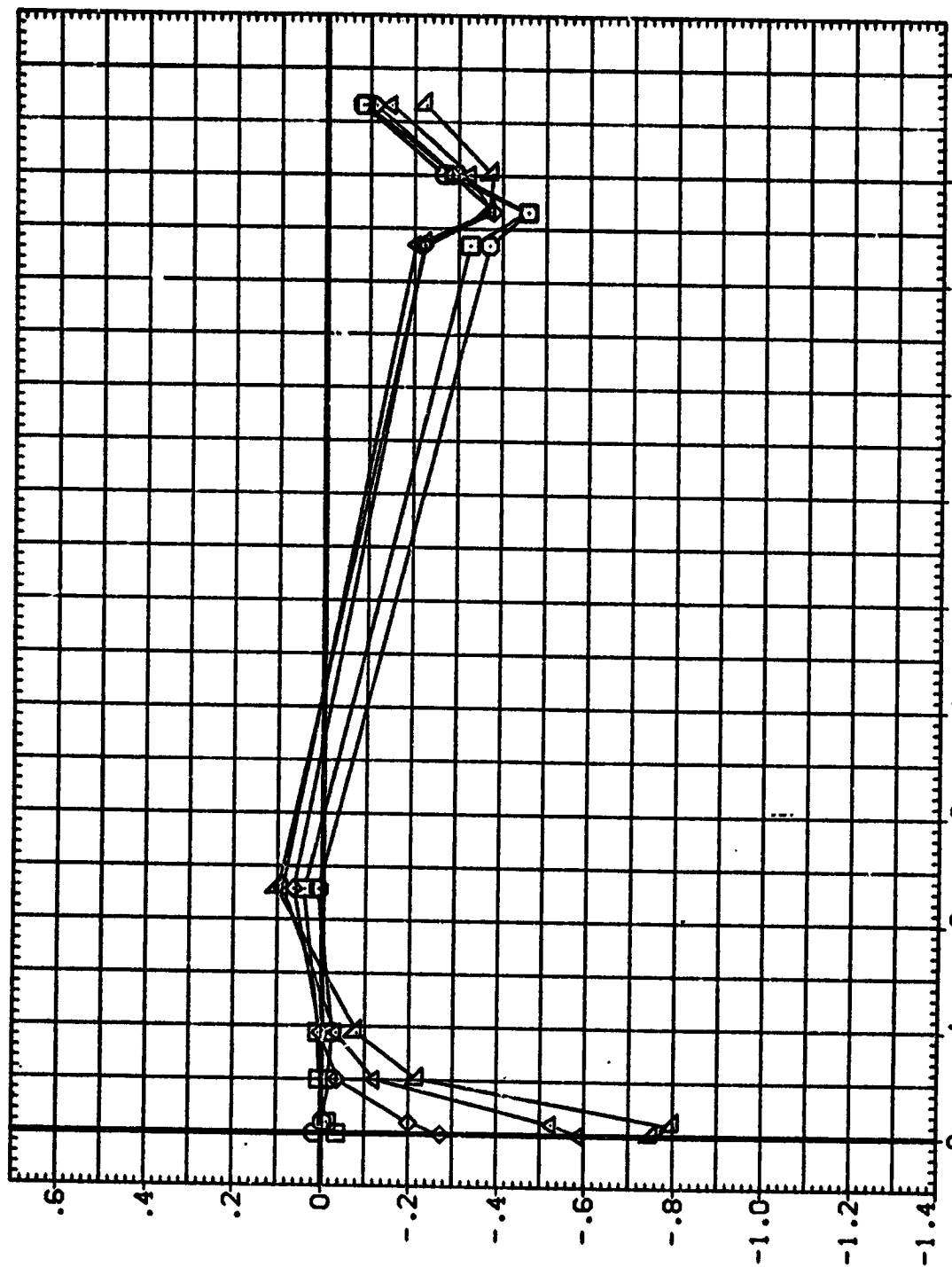
BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRBK
 L-ELVN
 MACH

55.000
 .000
 .900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L04)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .427
 BETA 4.000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPDRBK 55.000
 16.300 L-ELVN .000
 .000 MACH .900

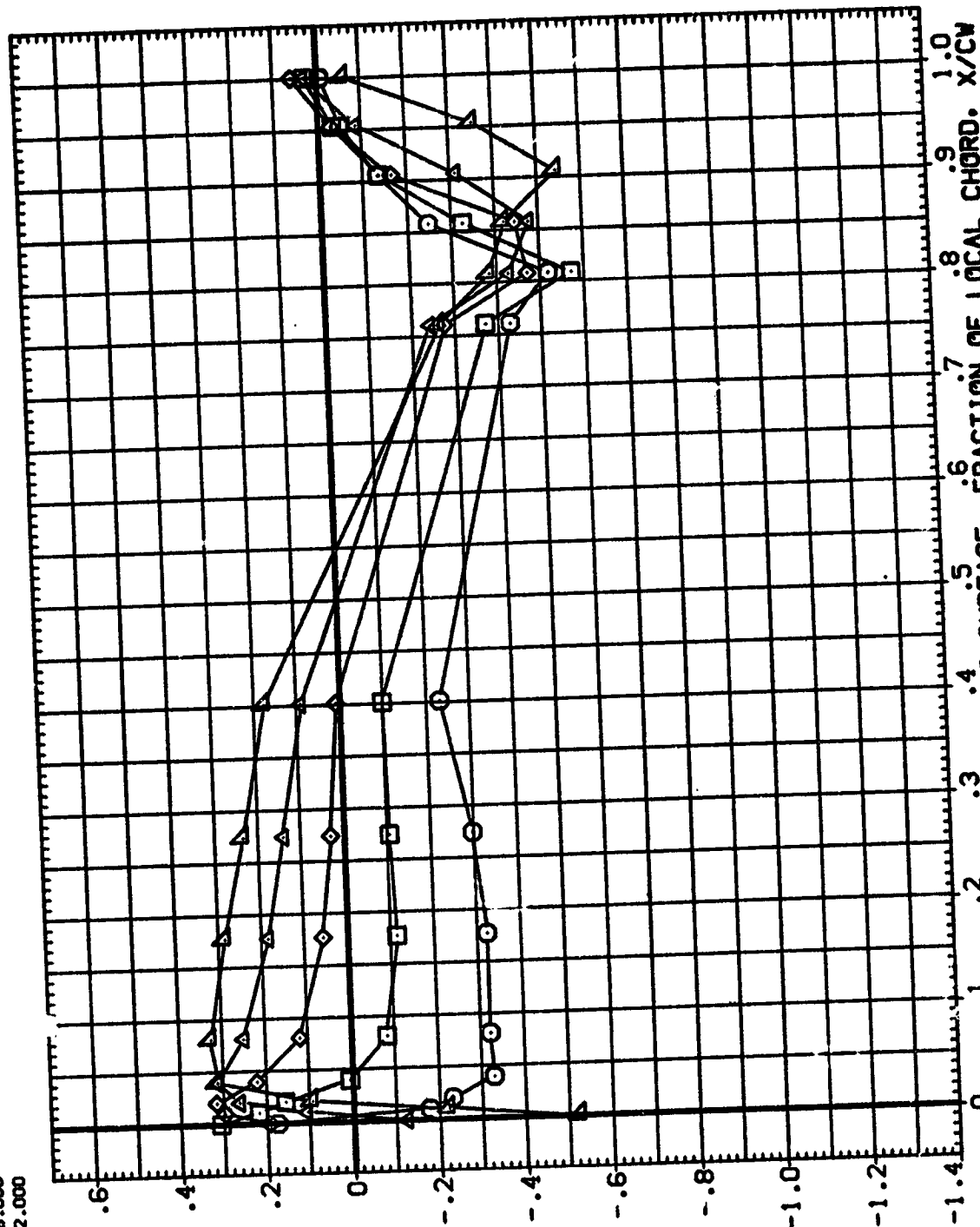


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL
 ▲
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z1/B1
 .673

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SP2BRK .000 SS.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .900

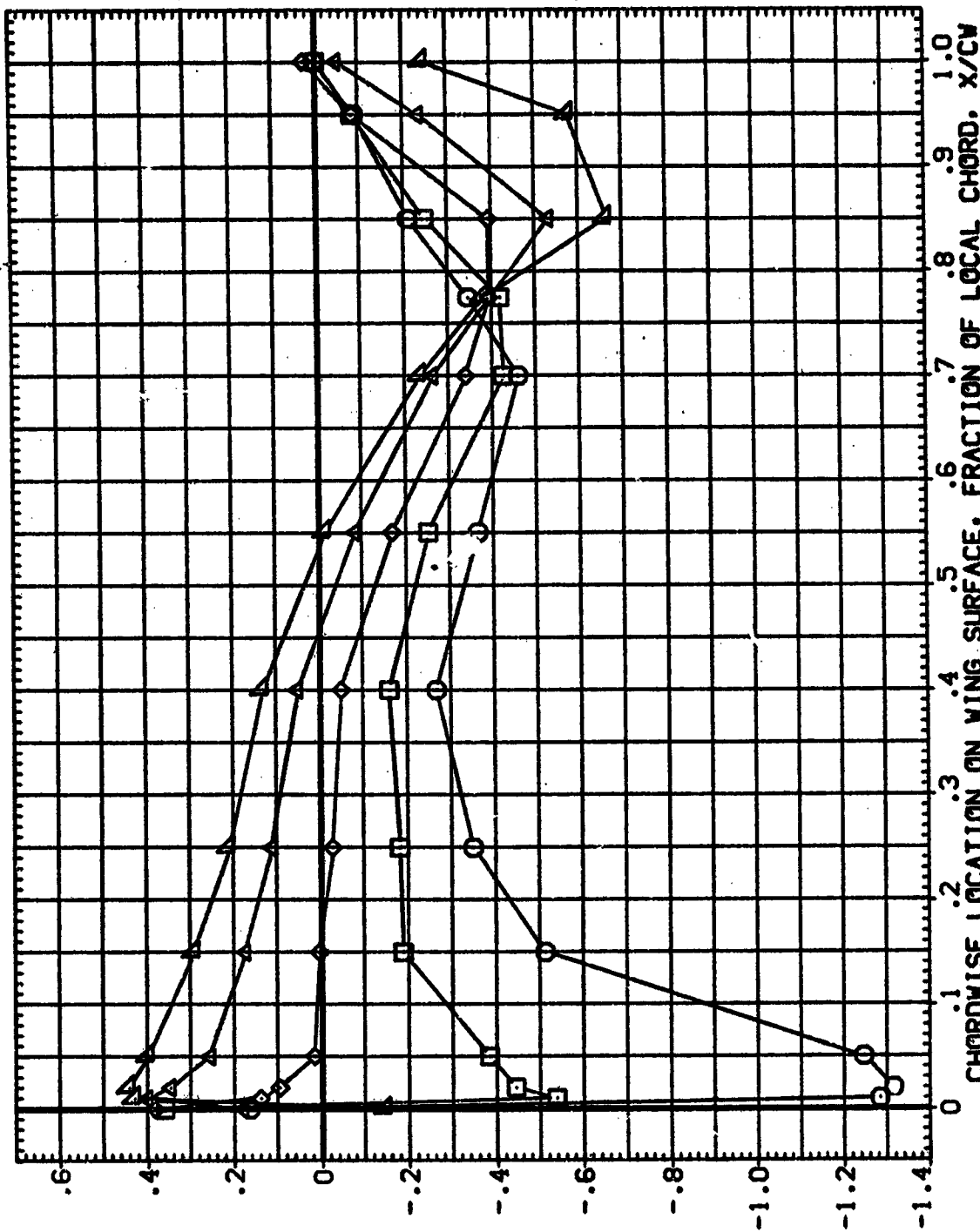


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L04)

SYMBOL
 ▽
 ◇
 □

ALPHA
 -4.000
 4.000
 8.000
 12.000

2V/BN
 .887

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

.000
 16.300
 .000

SPDRBK
 L-ELVN
 MACH

55.000
 .000
 .900

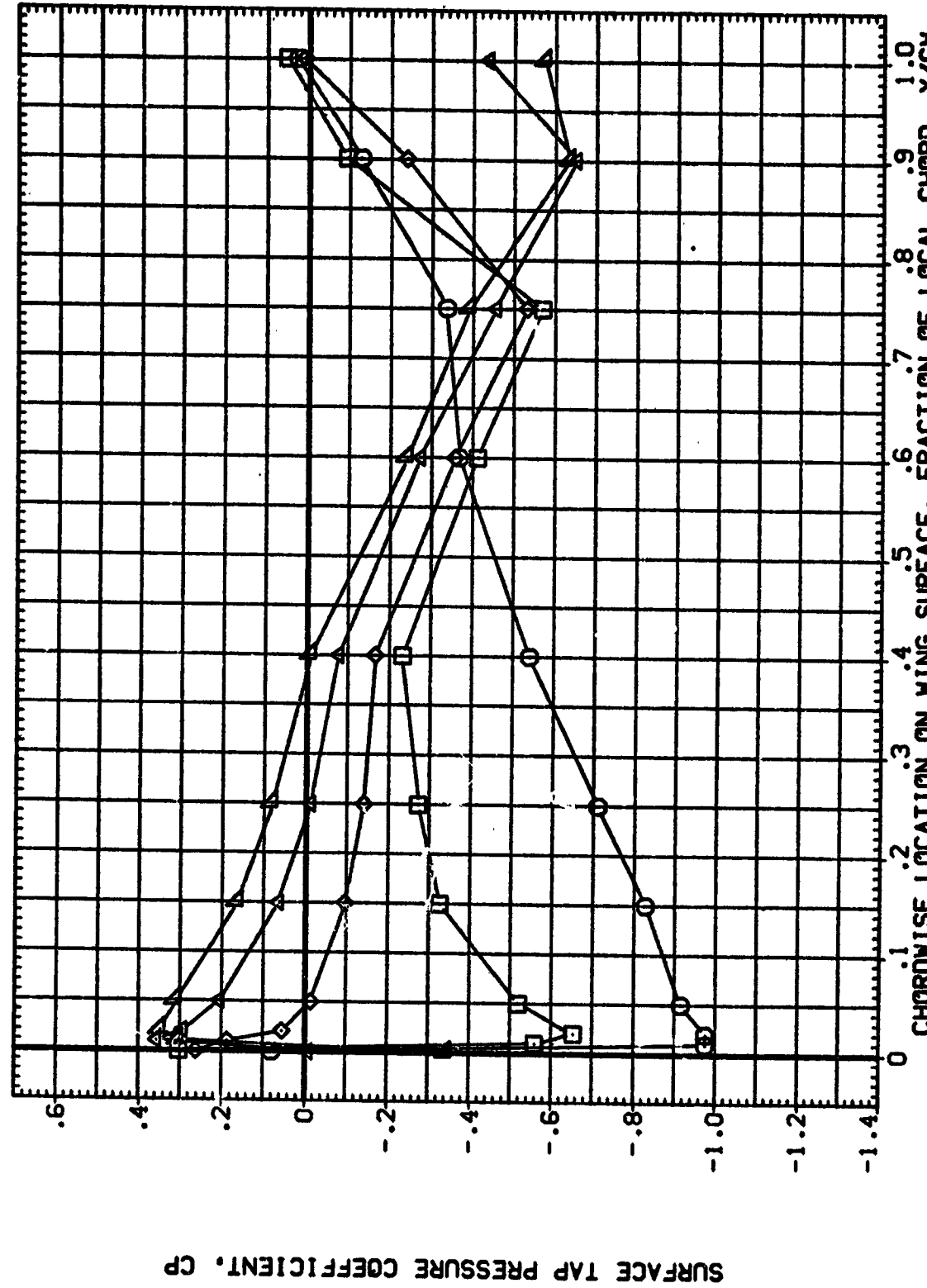


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB LEFT WING BOT(IE8LO4)

SYMBOL
 □ ◇ ○ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .972

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRBK
 L-ELVN
 MACH

99.000
 .000
 .900

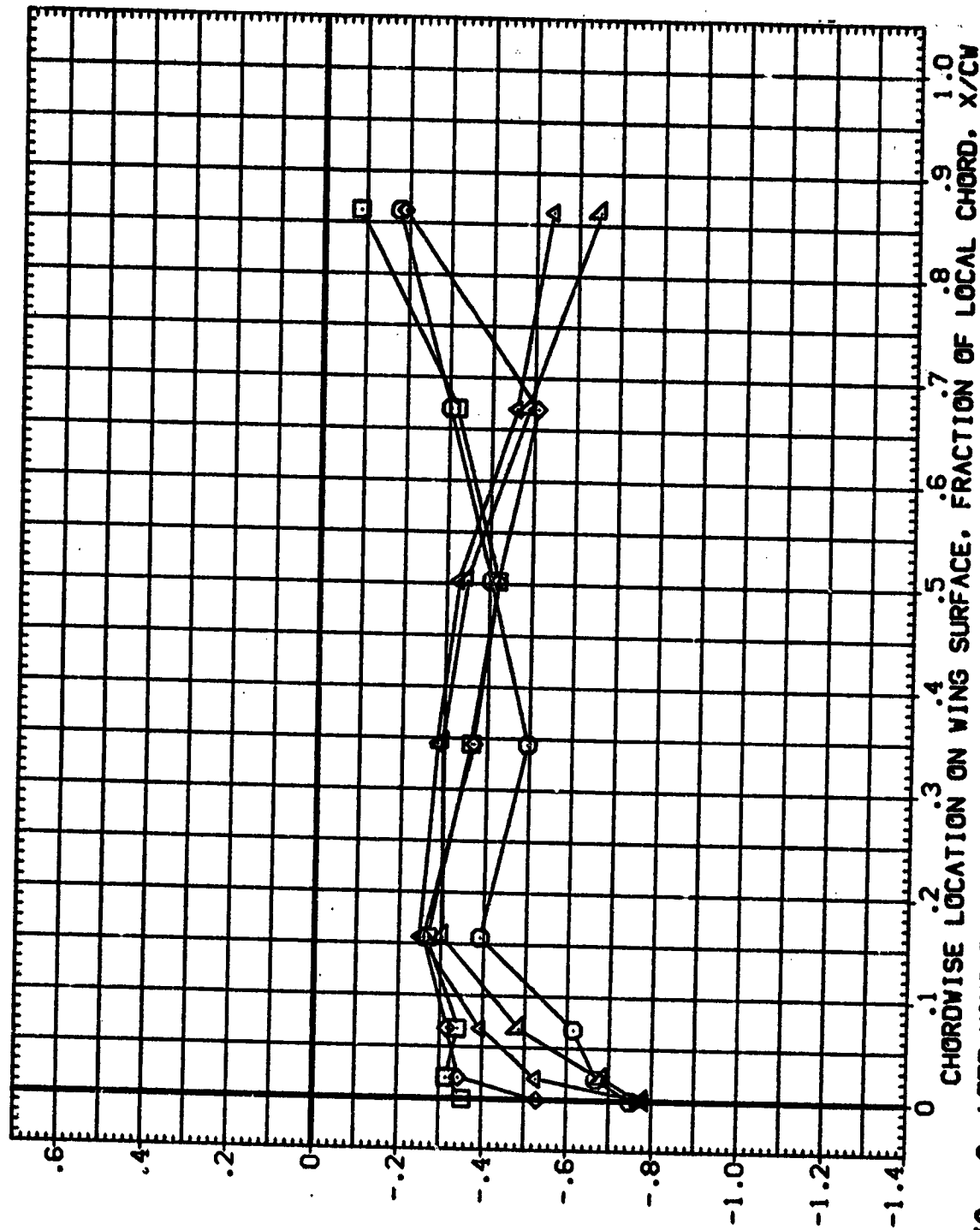


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V
 .299

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRK
 L-ELVN
 MACH

55.000
 .000
 1.100

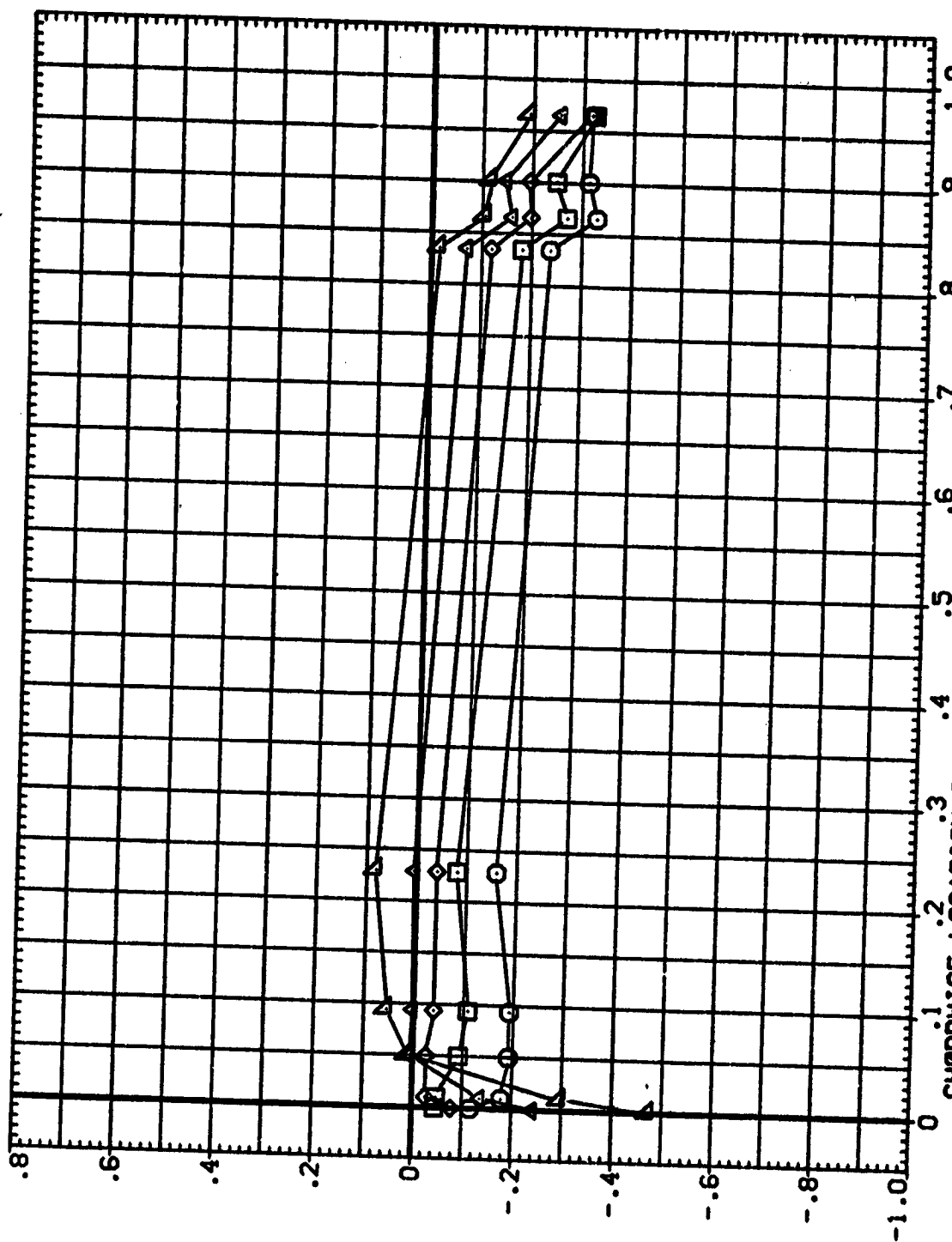


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL
 ▽
 ◻
 ◊
 ◯

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .427

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

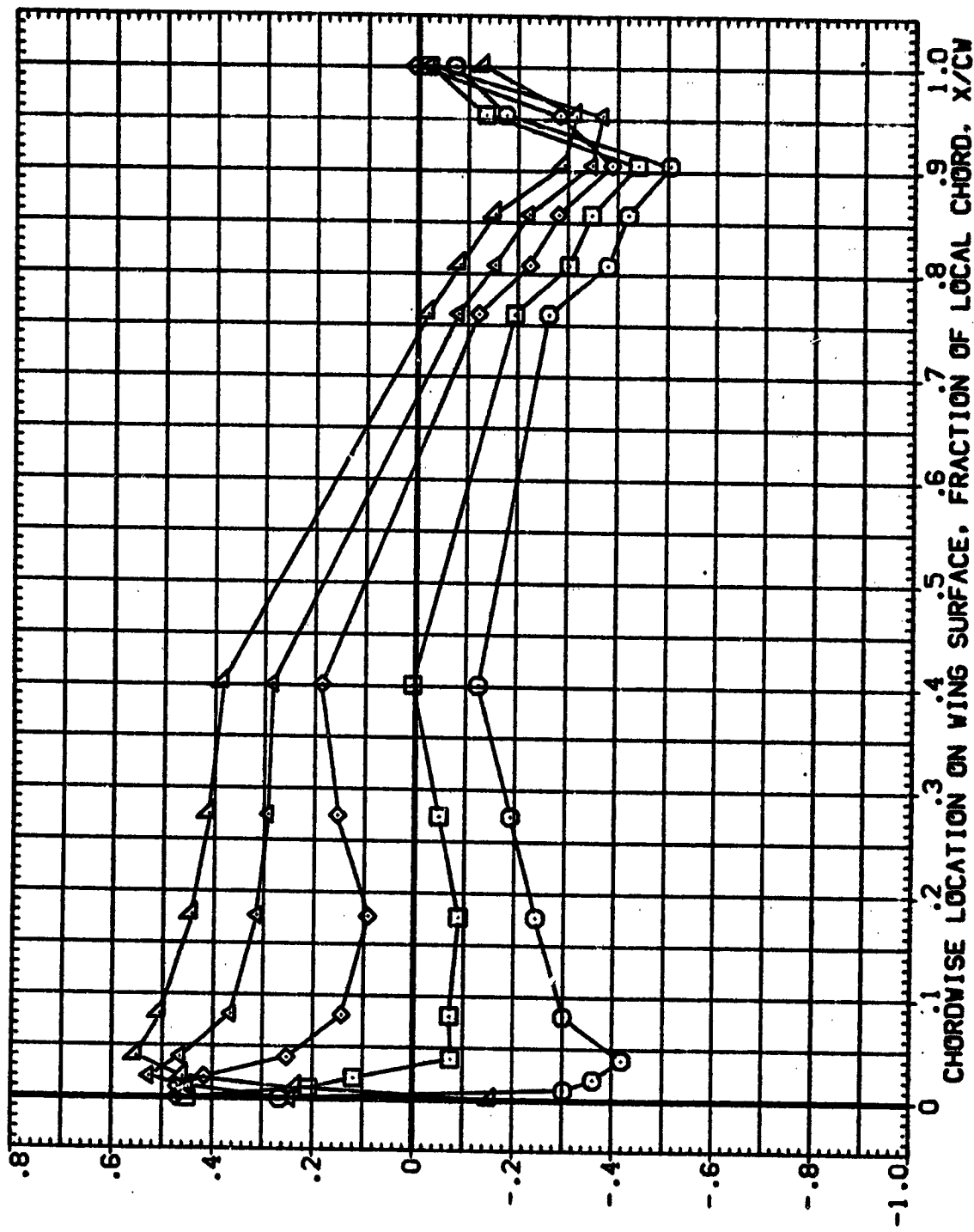


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL
 ▽
 ◻
 ◊
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .573

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 55.000
 .000
 SPOORR
 16.300
 .000
 L-ELVN
 R-ELVN
 1.100
 .000
 MACH

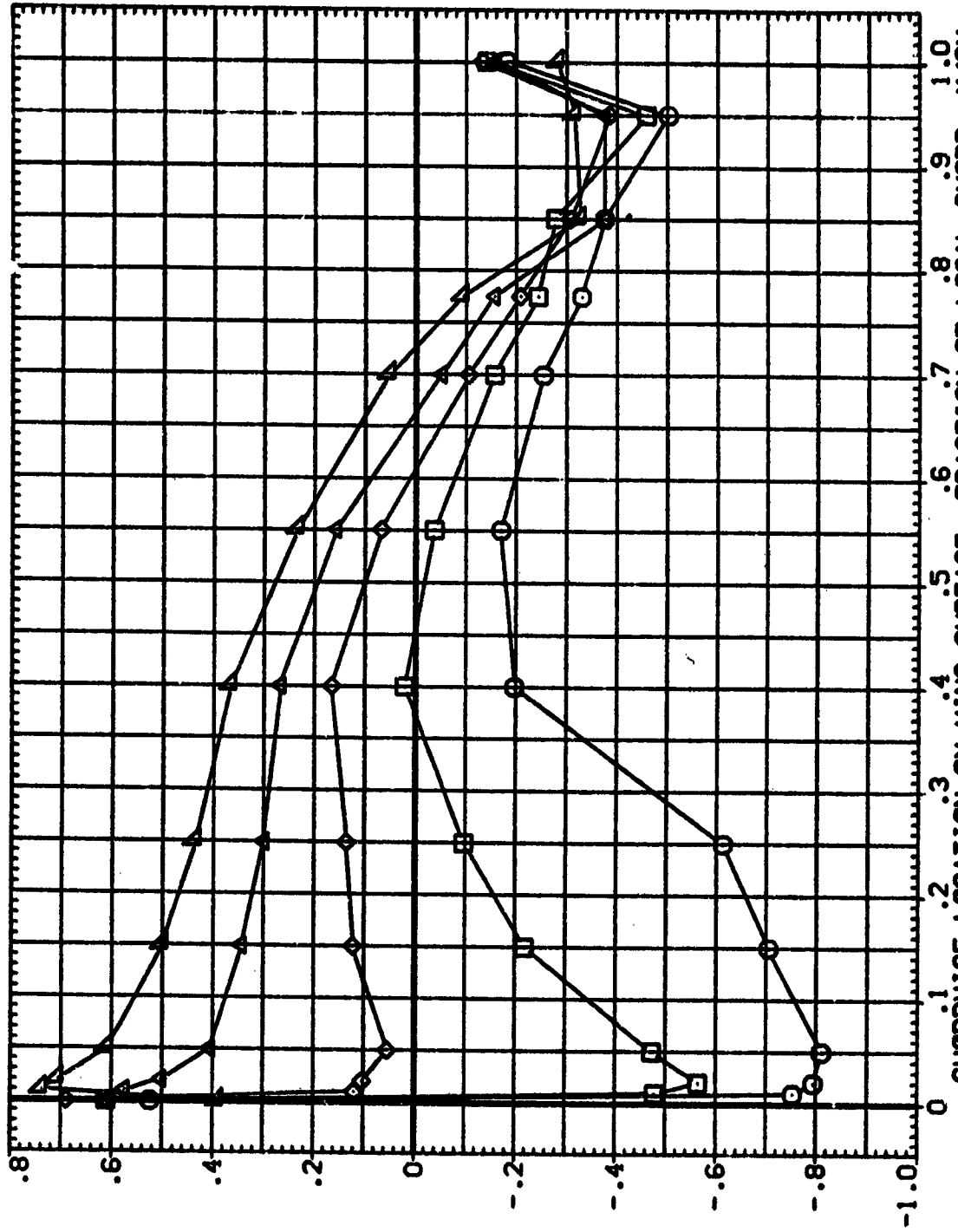


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

Texas

ALPHA	BETA
-4.000	-4.000
.000	.000
4.000	
8.000	
12.000	

	PARAMETRIC VALUES
R-CORR	.000
BOFLAP	16.300
R-ELVN	.000
	NACH
	1.100
	55.000

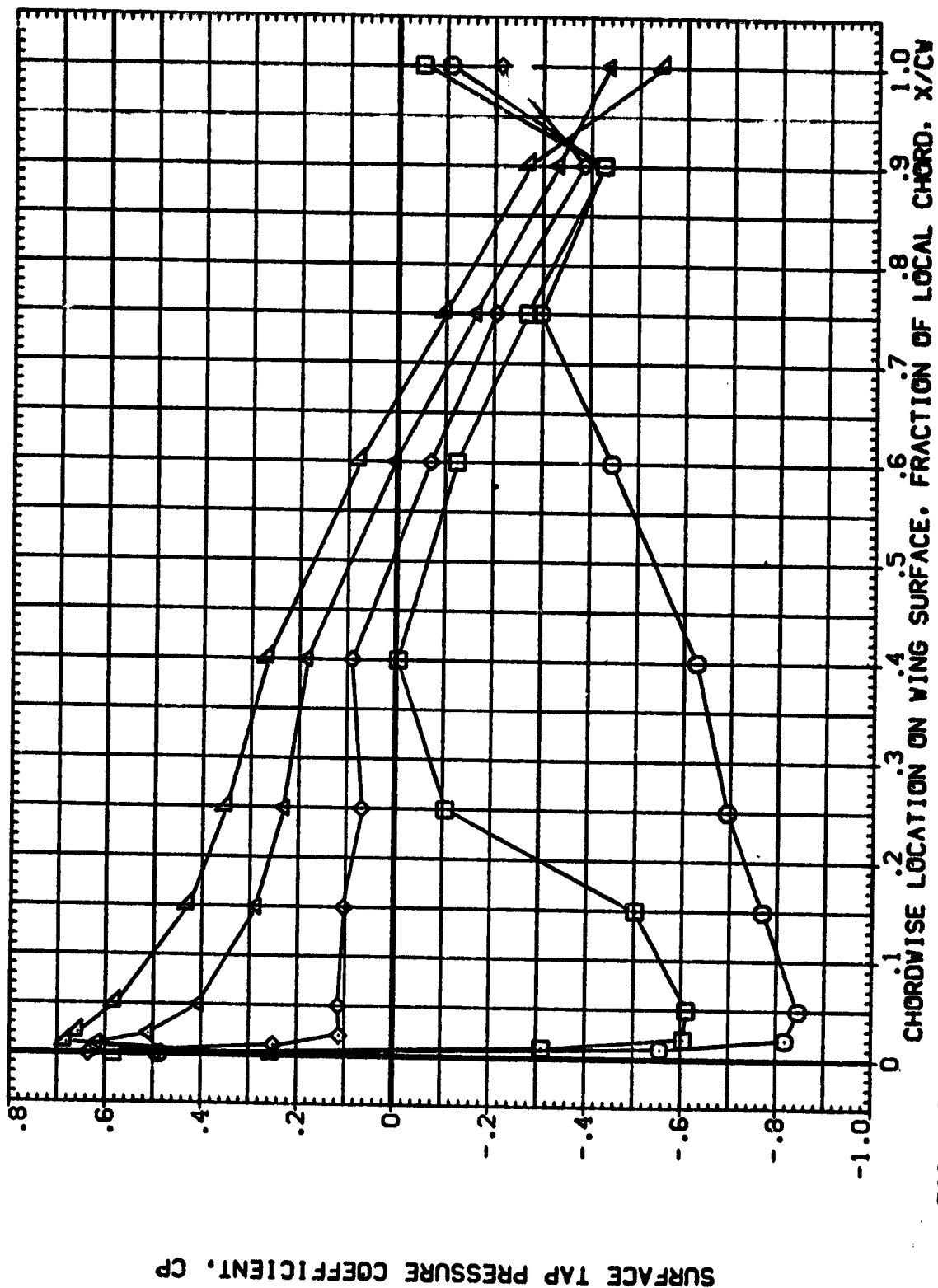


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

PARAMETRIC VALUES
 RUDDER .000 SPDRXK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

ALPHA 2Y/8V BETA
 -4.000 .289 .000
 4.000
 8.000
 12.000

SYMBOL
 ◻ ◊ ◴ ◵

SURFACE TAP PRESSURE COEFFICIENT, CP

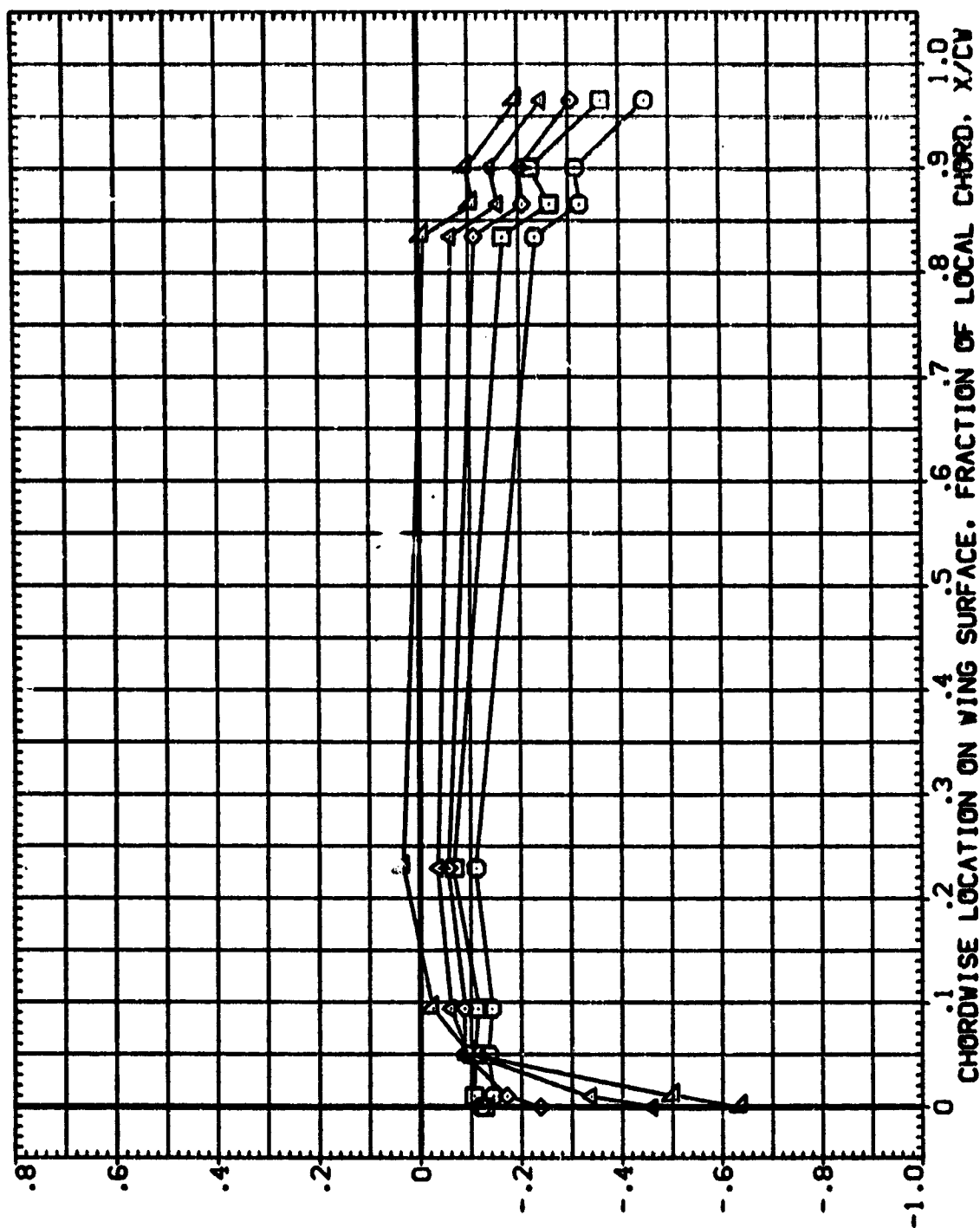
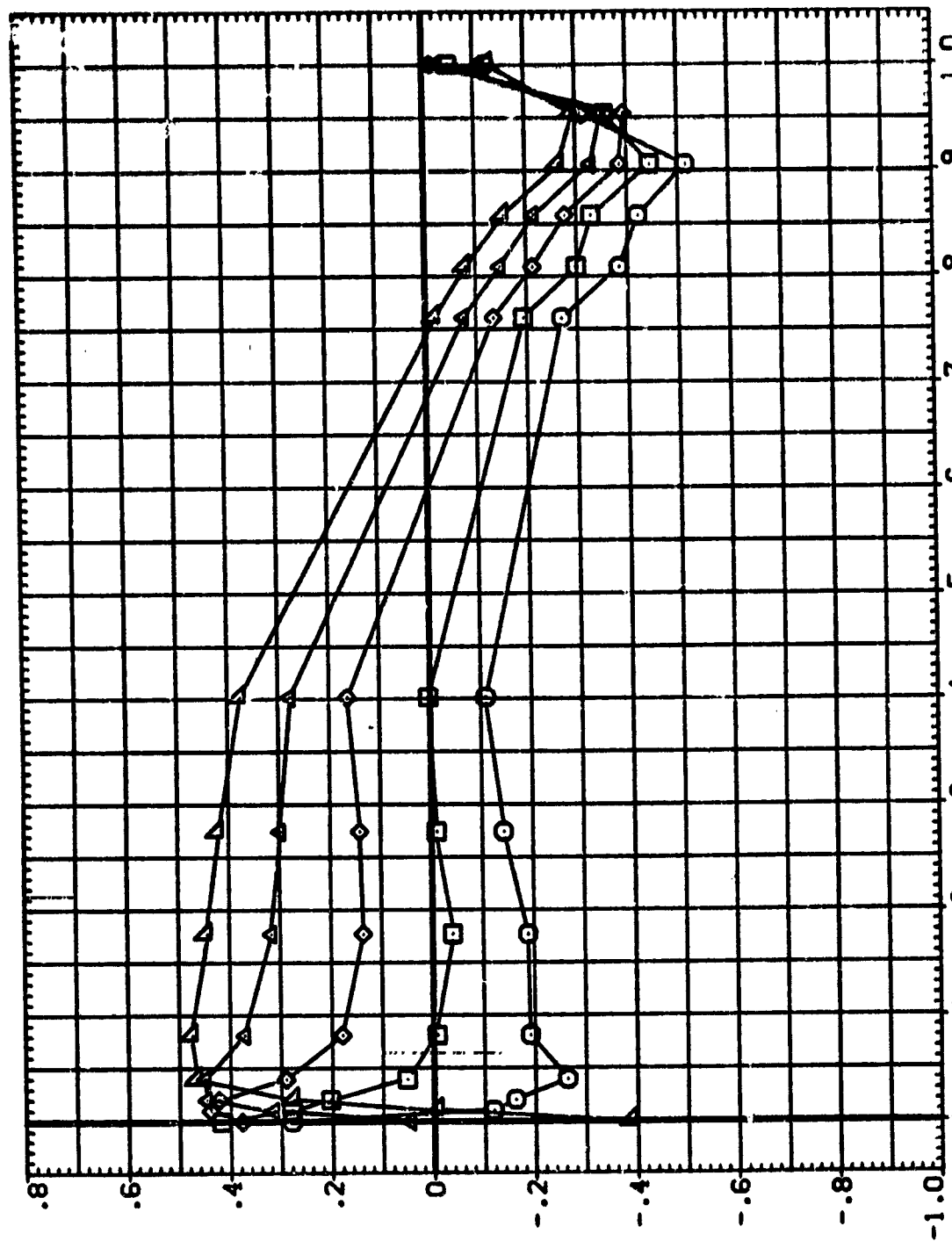


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL	ALPHA	2V/8V	BETA	RUDDER	PARAMETRIC VALUES
▷	-4.000	.427	.000	BOFLAP	.000
◇	.000			R-ELVN	18.300
◻	4.000			PACH	.000
◊	8.000				1.100
△	12.000				



CHORDWISE LOCATION ON WING SURFACE. FRACTION OF LOCAL CHORD. X/CW

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

PARAMETRIC VALUES
 RUDER .000 SPOBRN .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

ALPHA 21/80 BETA .000

SYMBOL
 -4.000
 .000
 4.000
 8.000
 12.000

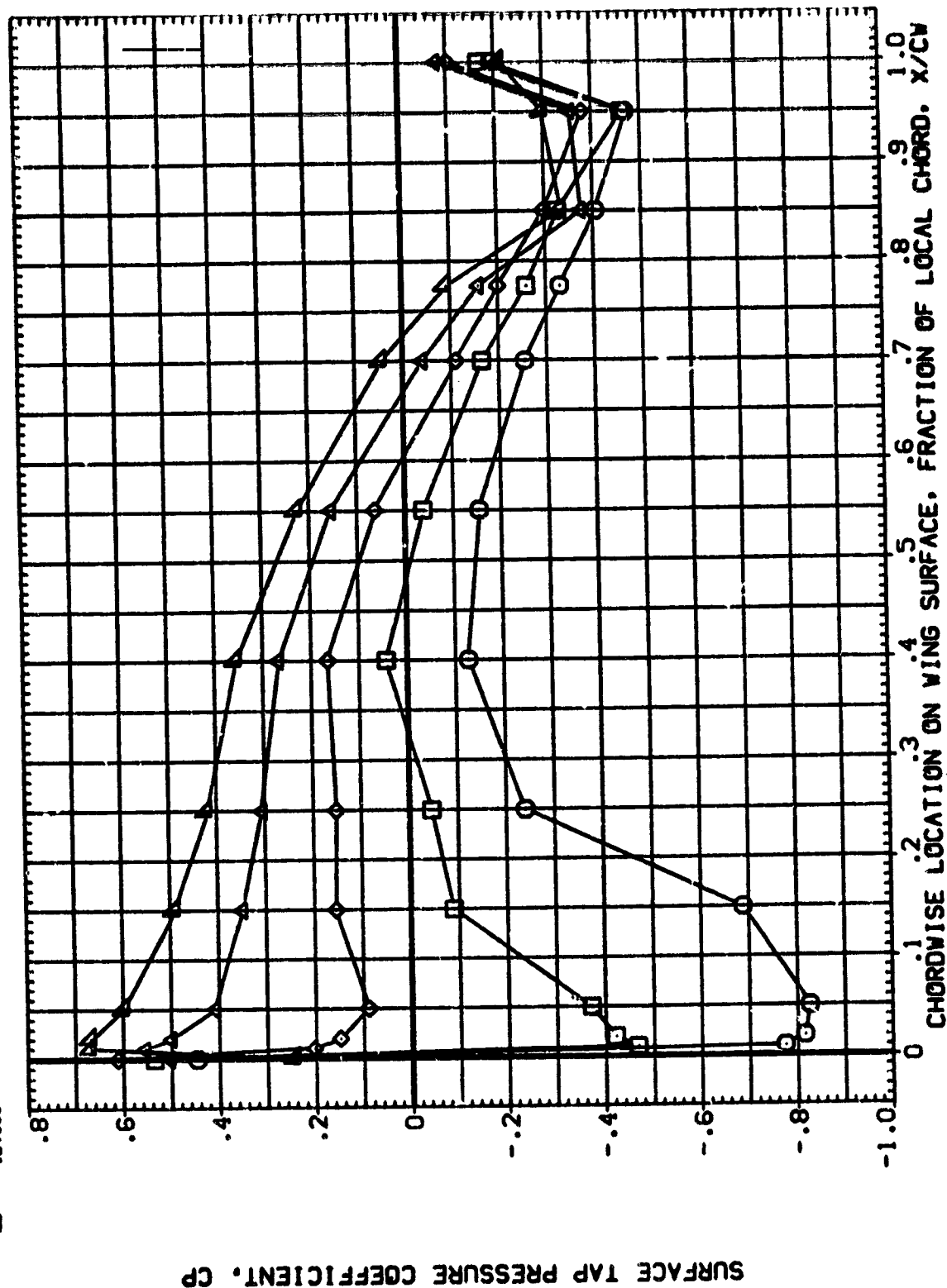


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R OR8 LEFT WING BOT(1E8L03)

SYMBOL	ALPHA	2Y/8V	BETA	RUDER	PARAMETRIC VALUES	
○	-4.000	.887	.000	BOFLAP	.000	
□	.000			R-ELVN	.000	
◇	4.000				L-ELVN	.000
△	8.000				MACH	1.100
▽	12.000					
						55.000

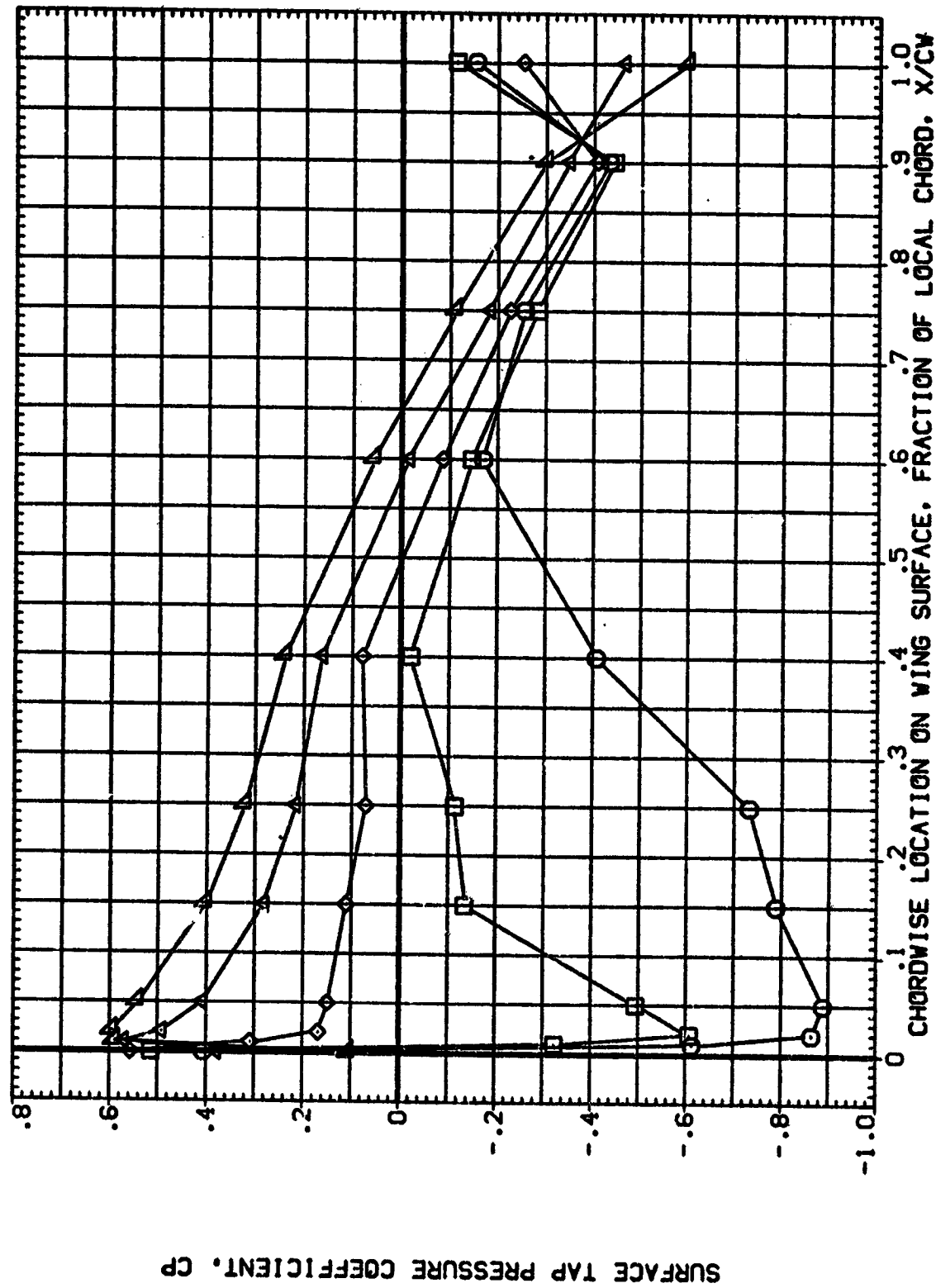


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL ALPHA 2Y/BN BETA
 -4.000 .972 .000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

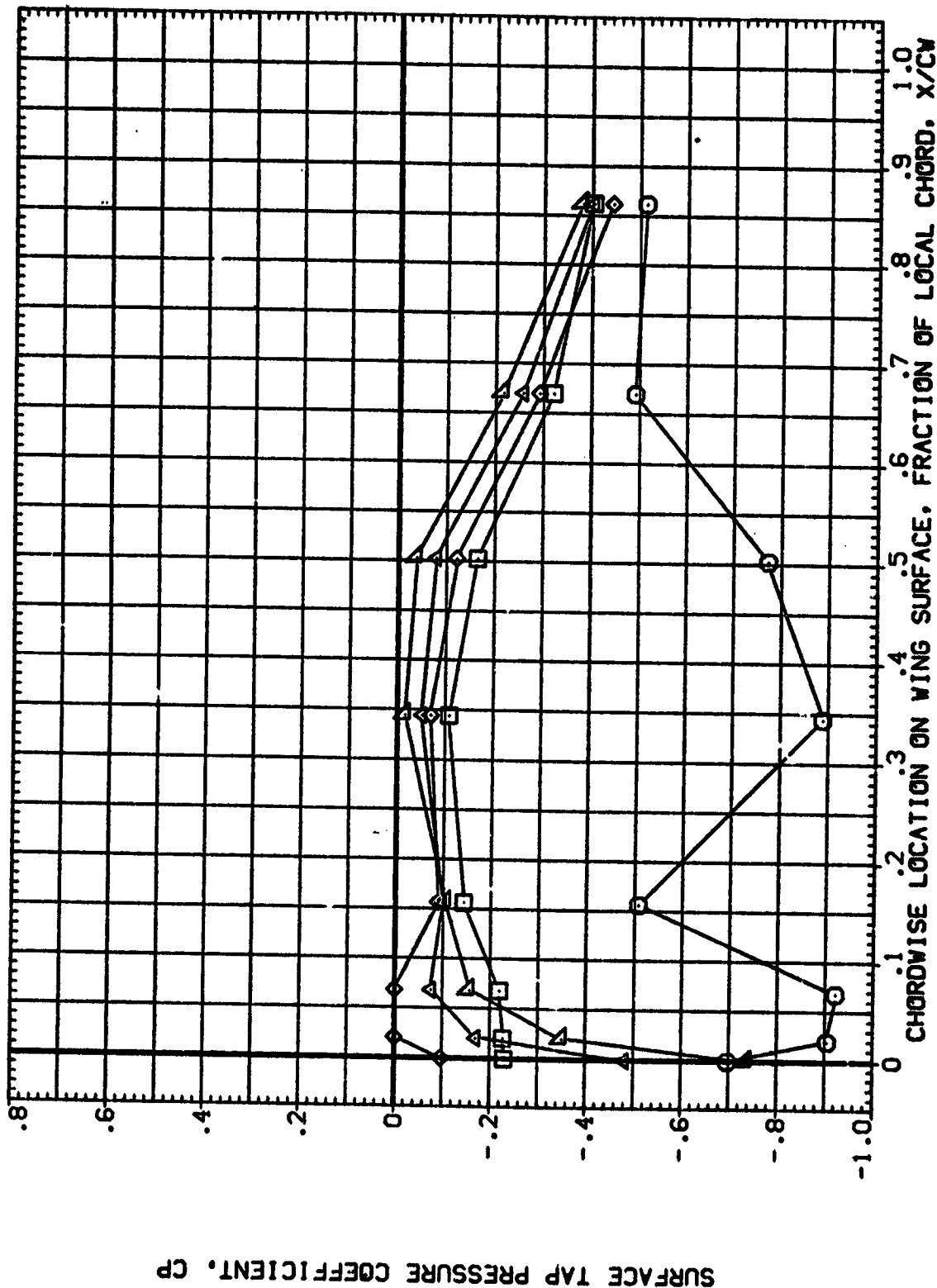


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES	
▽	-4.000	.299	4.000	BOFLAP	.000	SPOBRK
◇	.000			R-ELVN	.000	L-ELVN
□	4.000				.000	NACH
△	8.000				1.100	
▽	12.000					

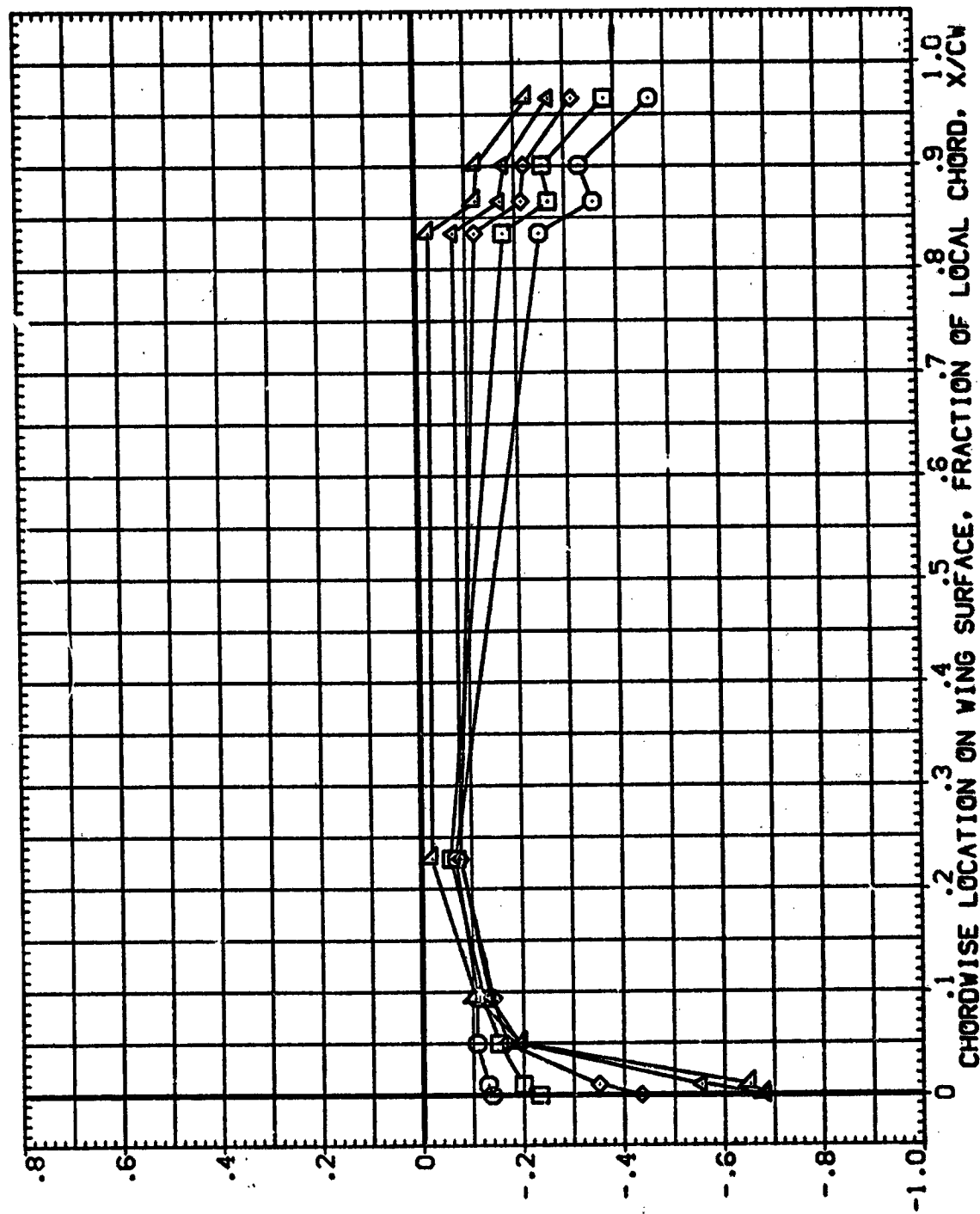


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L03)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES	SPDRK	L-ELVN	MACH
▽	-4.000	.427	4.000	BOFLAP	.000	.000	.000	1.100
◇	.000			R-ELVN	.000	.000	.000	
□	4.000							
△	8.000							
▽	12.000							

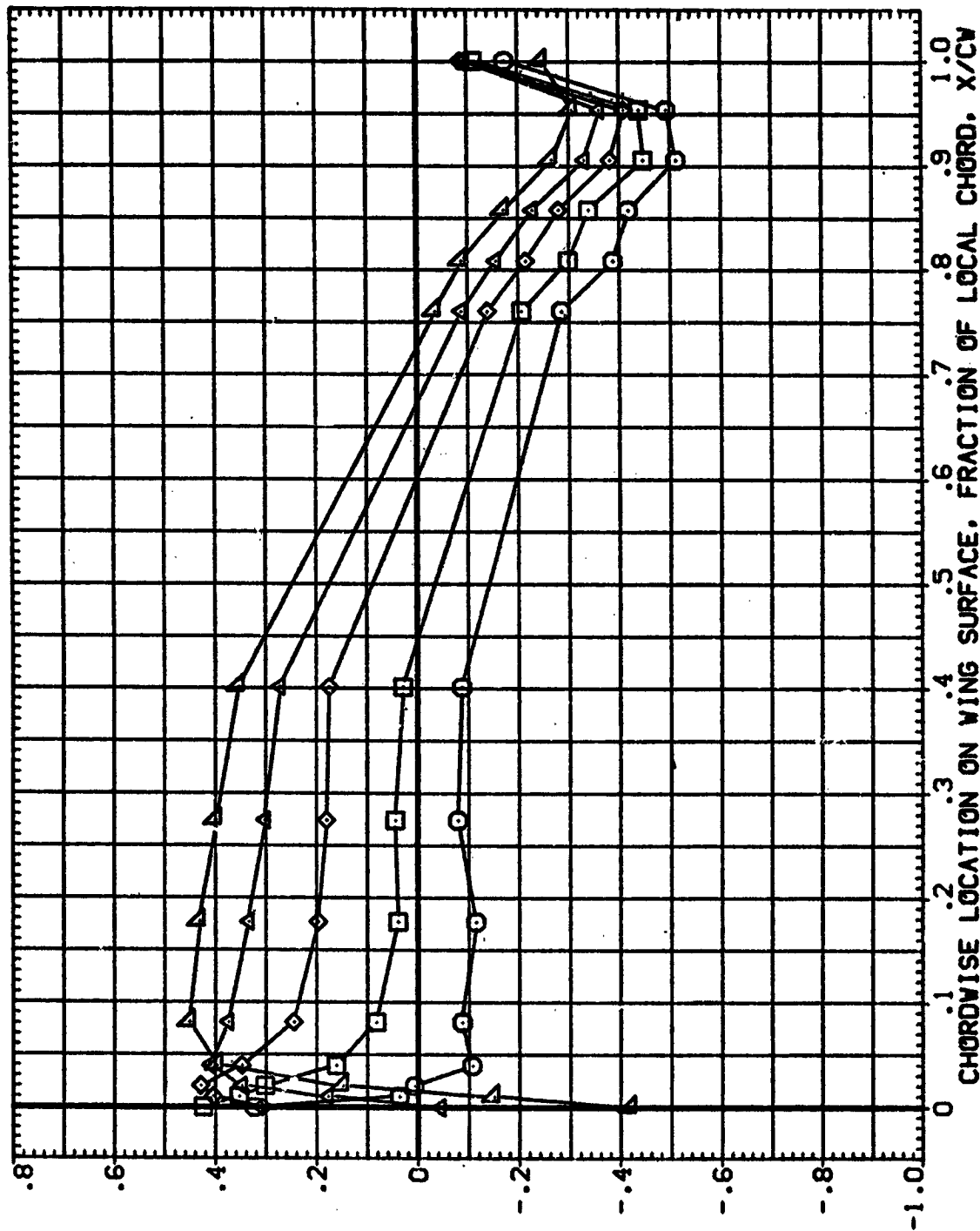


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL	ALPHA	2V/8V	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.673	4.000	BDFLAP	.000 SPOBRK
□	.000			R-ELVN	16.300 L-ELVN
◇	4.000				.000 MACH
△	8.000				1.100
▽	12.000				

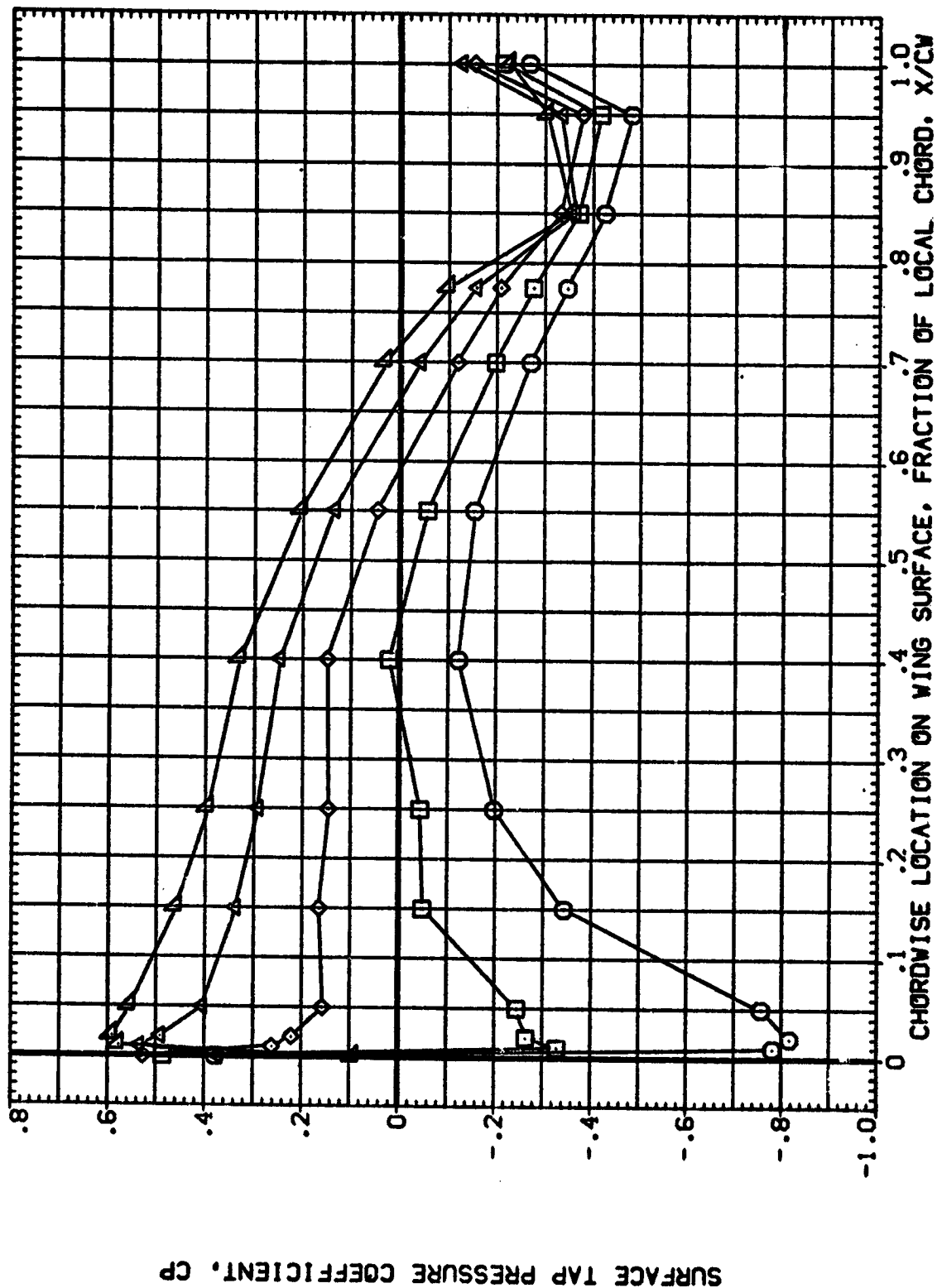


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) - :40A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

21/BN
.887

BETA
4.000

RUDDER
BOFLAP
R-ELVN

PARAMETRIC VALUES
.000
16.300
.000

55.000
.000
1.100

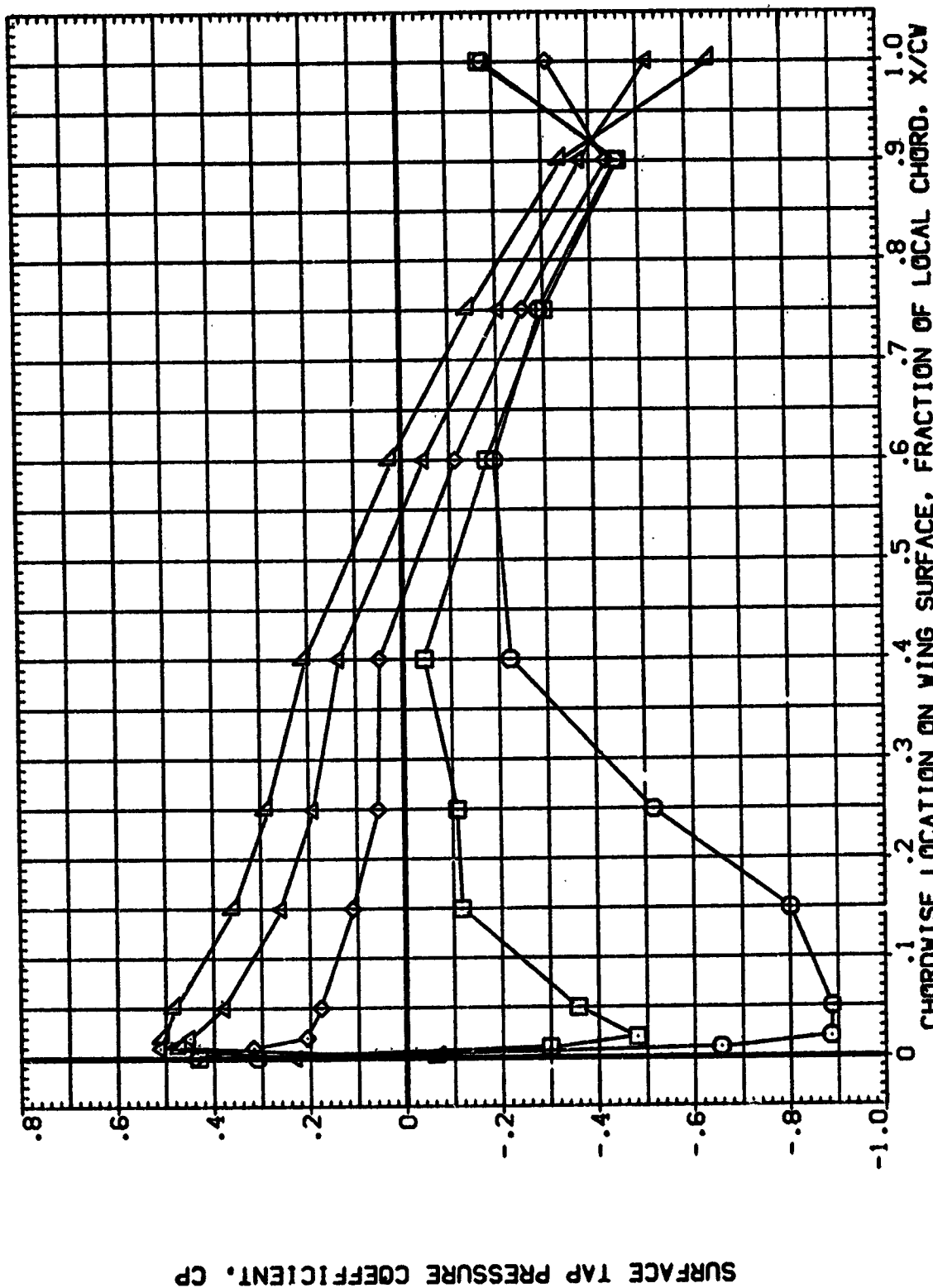


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L03)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.972	4.000	BOFLAP	.000 SPDRK 55.000
◇	.000			R-ELVN	16.300 L-ELVN .000
△	4.000				.000 MACH 1.100
▽	8.000				
▽	12.000				

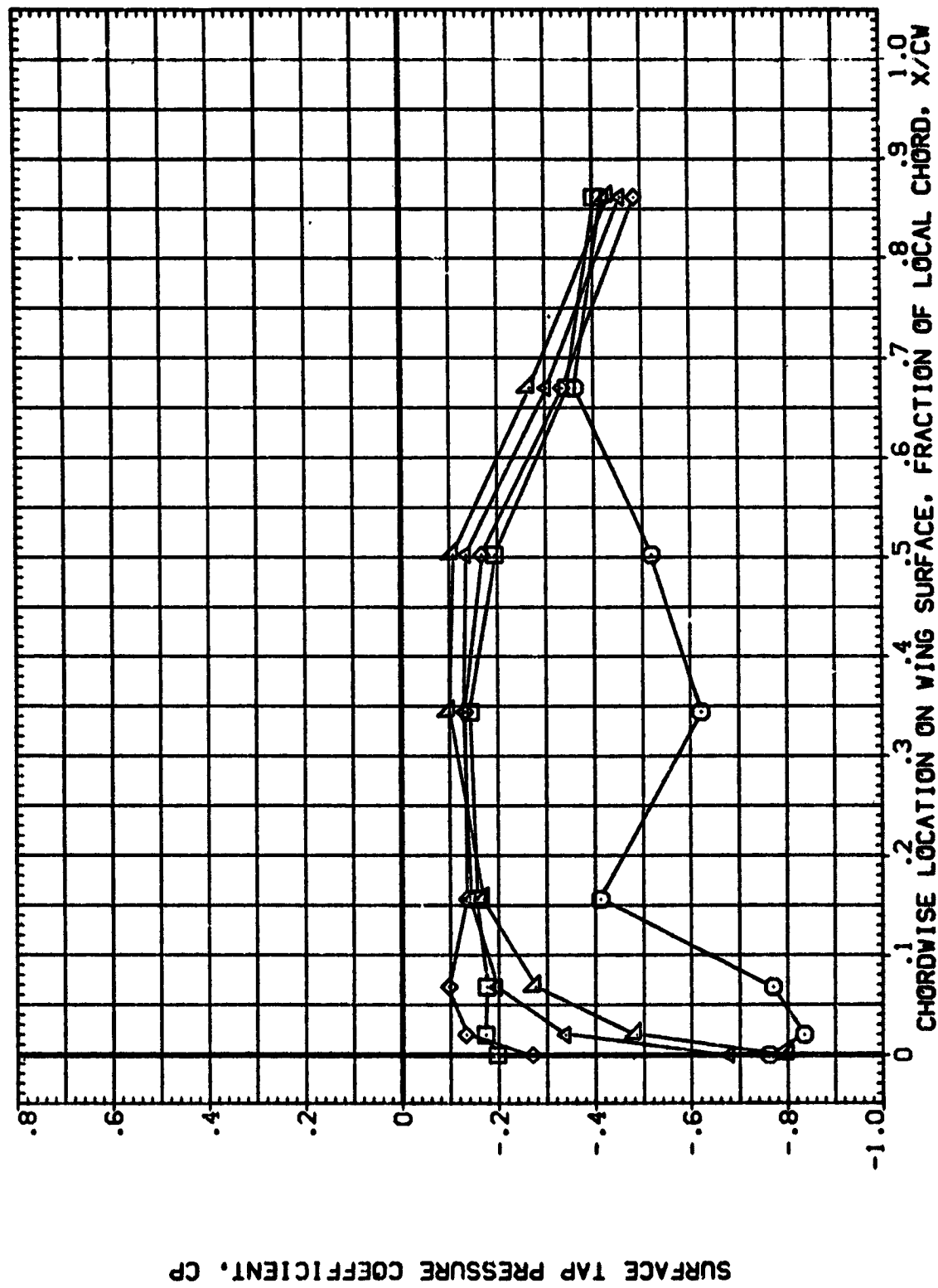


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRM
 L-ELVN
 MACH

55.000
 .000
 1.250

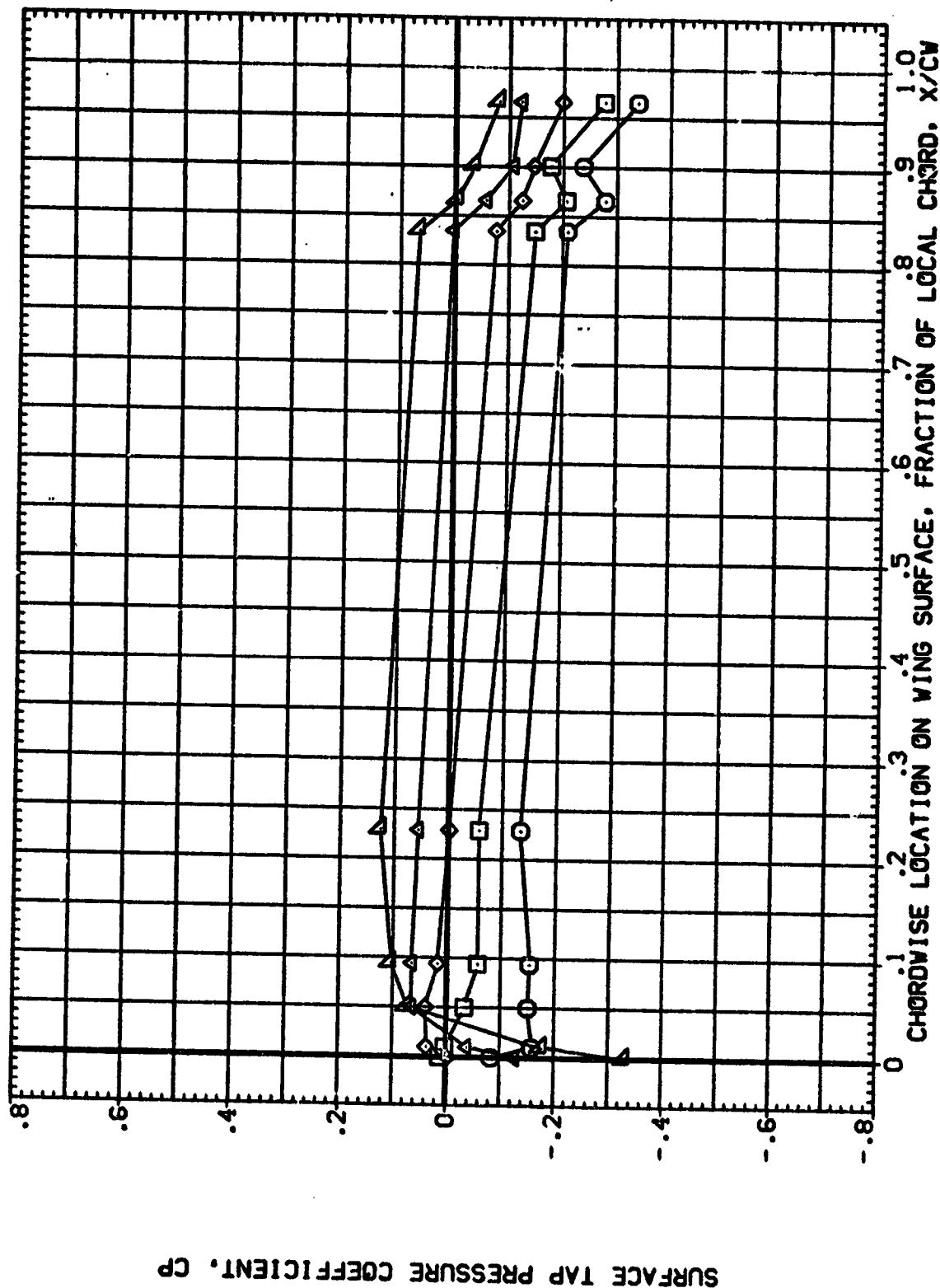


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/8N
 .427

BETA
 -4.000

PARAMETRIC VALUES

PARAMETRIC VALUES	RUDDER	BOFLAP	R-ELVN	SPOBRK	L-ELVN	MACH
.000	.000	.000	.000	.000	.000	.000
16.300	.000	.000	.000	.000	.000	.000
55.000	.000	.000	.000	.000	.000	.000
1.250	.000	.000	.000	.000	.000	.000

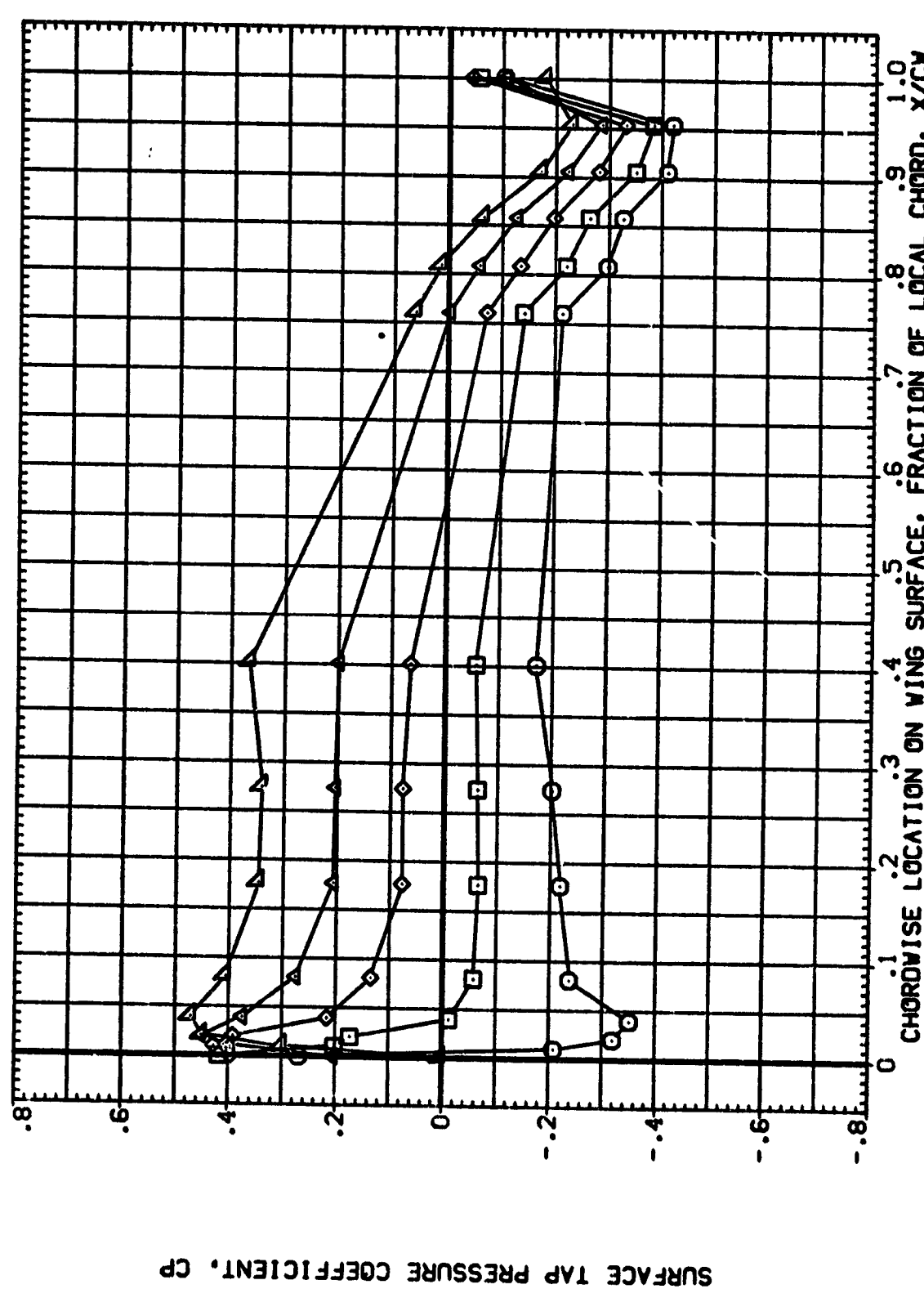


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BV
 .673

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	SPDRBK	55.000
80FLAP	.000	.000
R-ELVN	16.300	.000
	.000	1.250

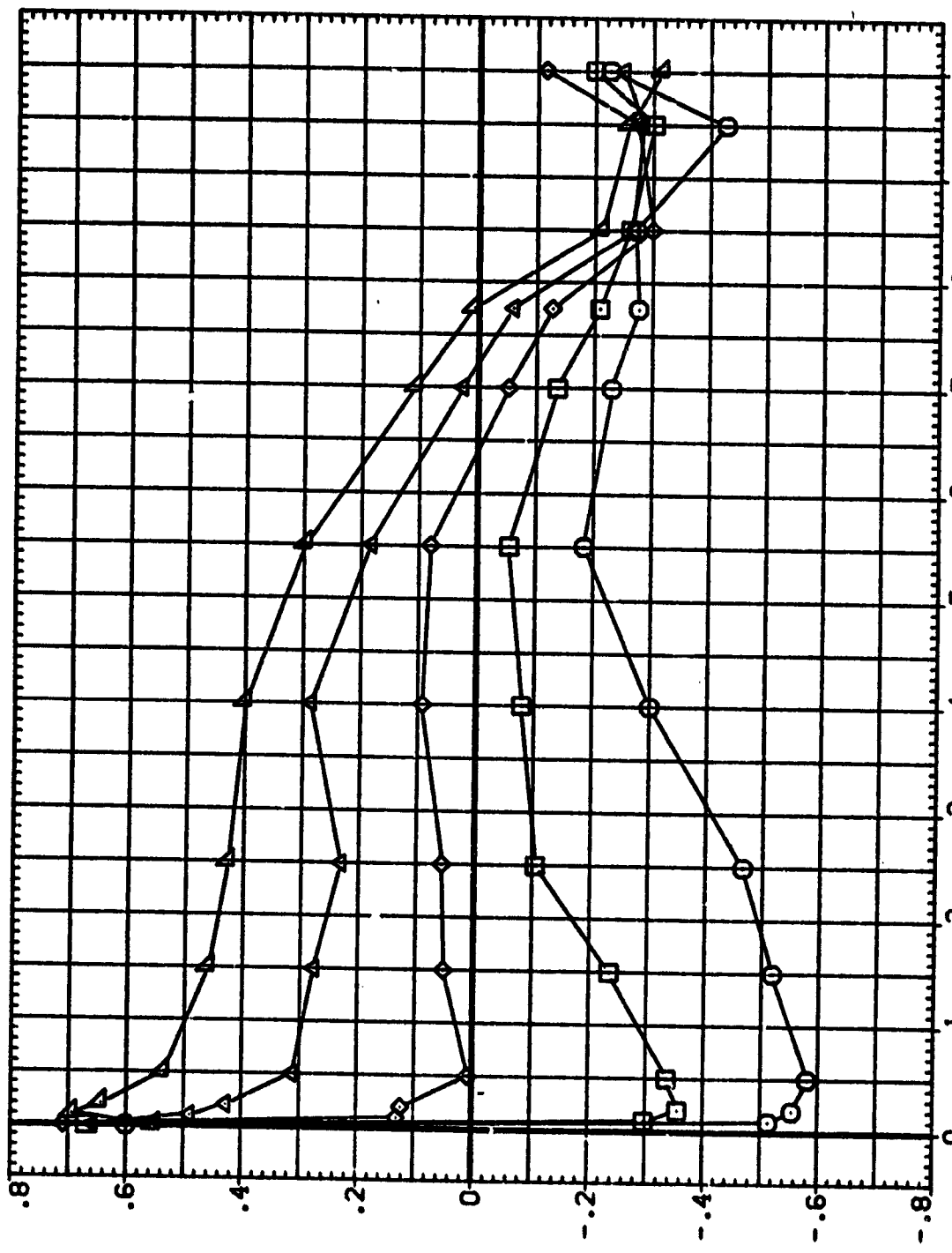


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL	PARAMETRIC VALUES		PARAMETRIC VALUES	
	ALPHA	21/5V	BETA	R-ELVN
▽	-4.000	.887	-4.000	80FLAP
◇	.000			.000
□	4.000			16.300
△	8.000			.000
▽	12.000			1.250

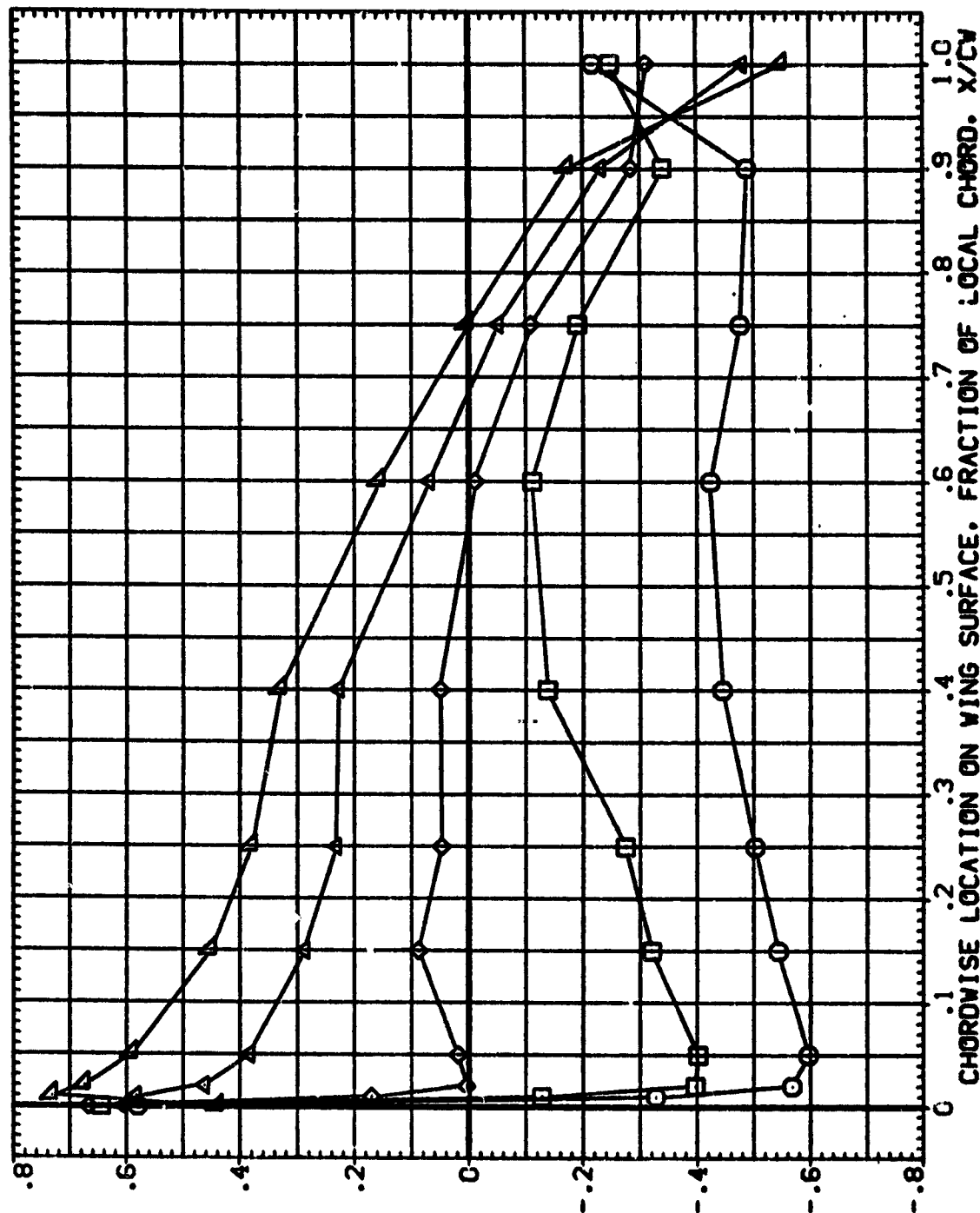


FIG. 9 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 0 DEGREES

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z1/BN
 .972

BETA
 -4.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SP0800
 16.300 L-ELVN
 .000 MACH
 55.000
 .000
 1.250

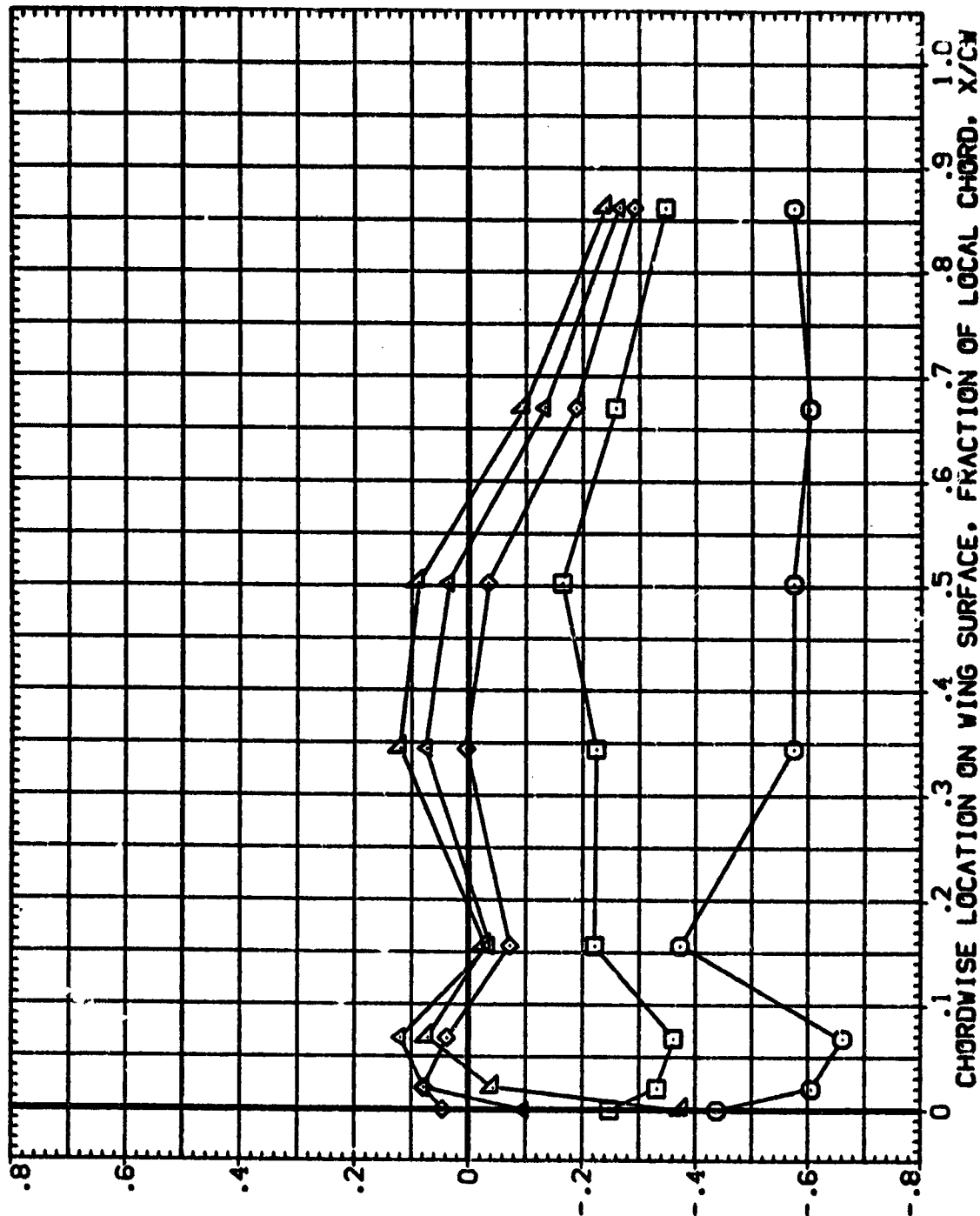


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA 21/BN BETA
 -4.000 .299 .000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

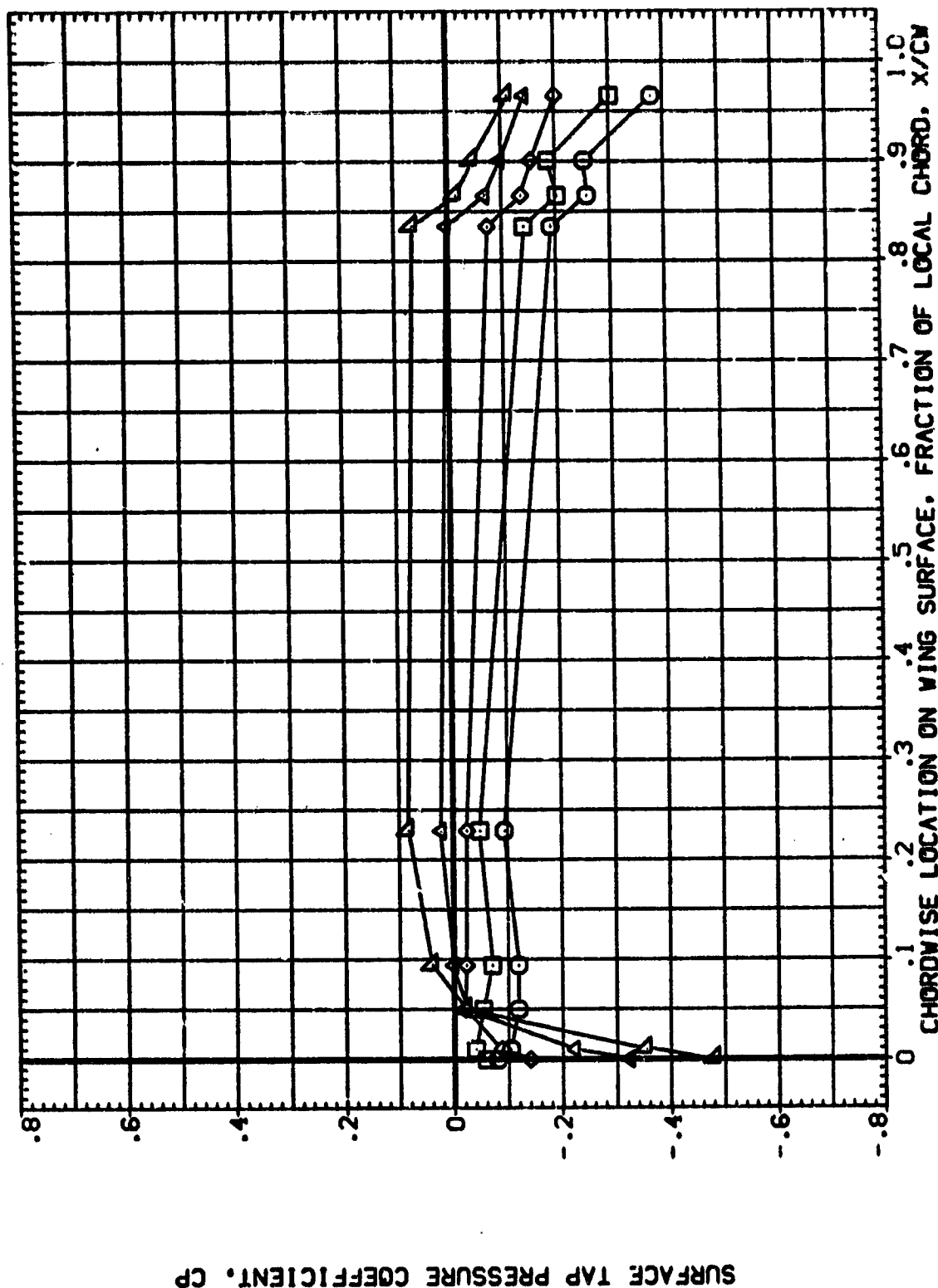


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL
 ▲
 □
 ◇
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .427

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 .000

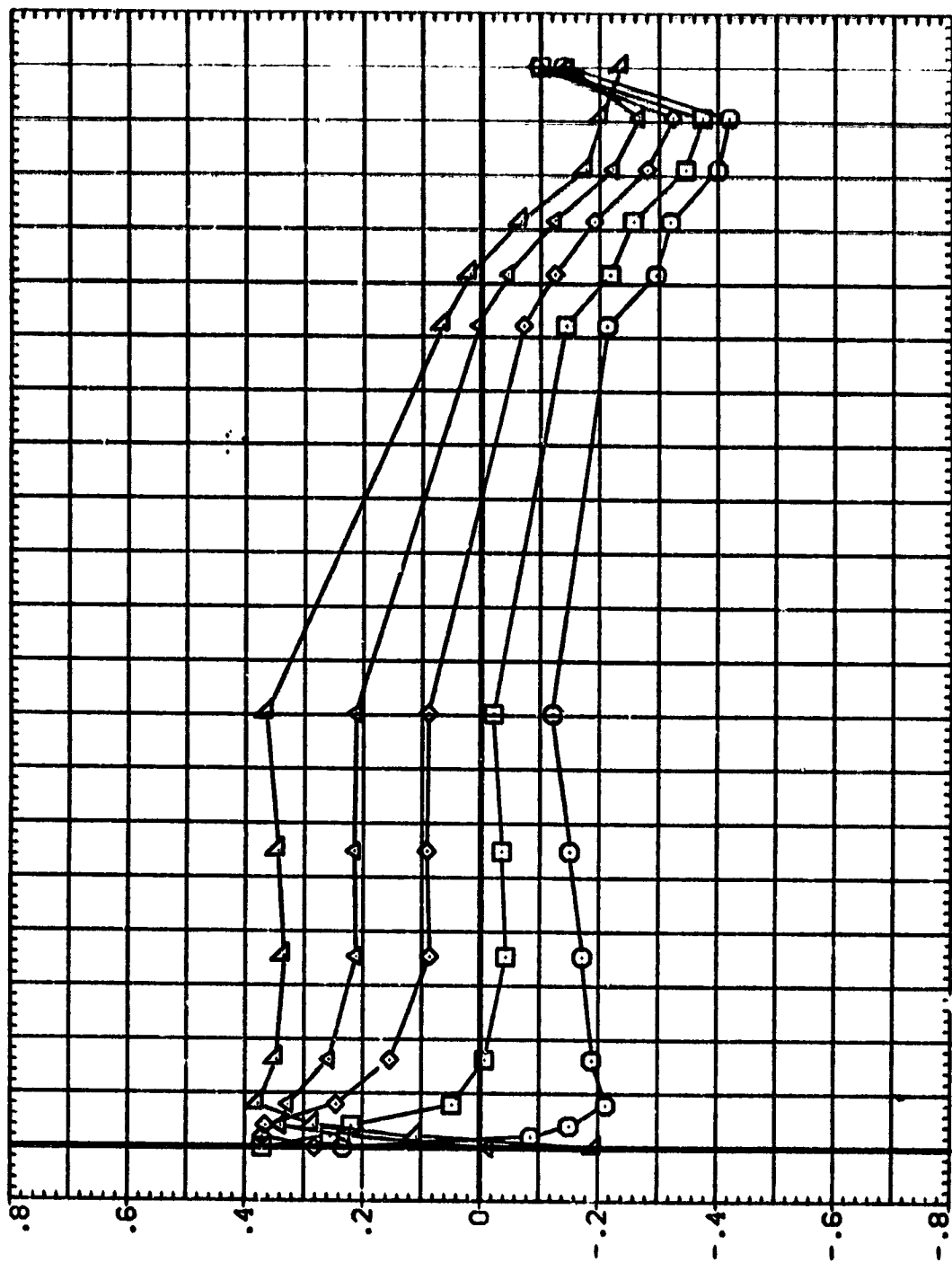
BOFLAP
 16.300

R-ELVN
 .000

SPOILER
 55.000

L-ELVN
 .008

MACH
 1.250



SURFACE TAP PRESSURE COEFFICIENT, CP

CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING :JT(1E8L02)

SYMBOL	ALPHA	2Y/BN	BETA		PARAMETRIC VALUES
○	-4.000	.673	.000	RUDDER	.000
□	.000			BOFLAP	16.300
◇	4.000			R-ELVN	.000
△	8.000				MACH
▽	12.000				
					55.000
					.000
					1.250

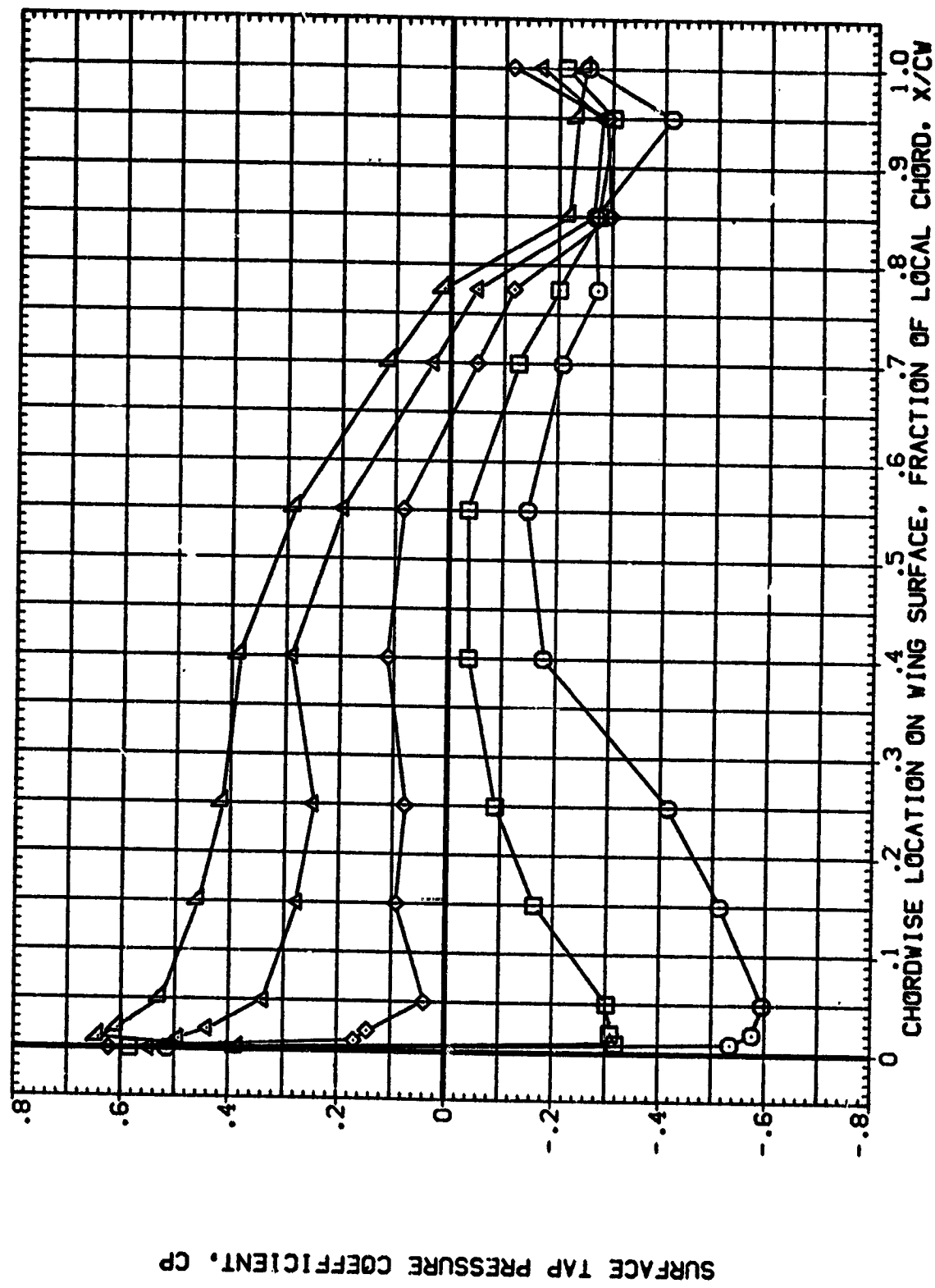


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .887

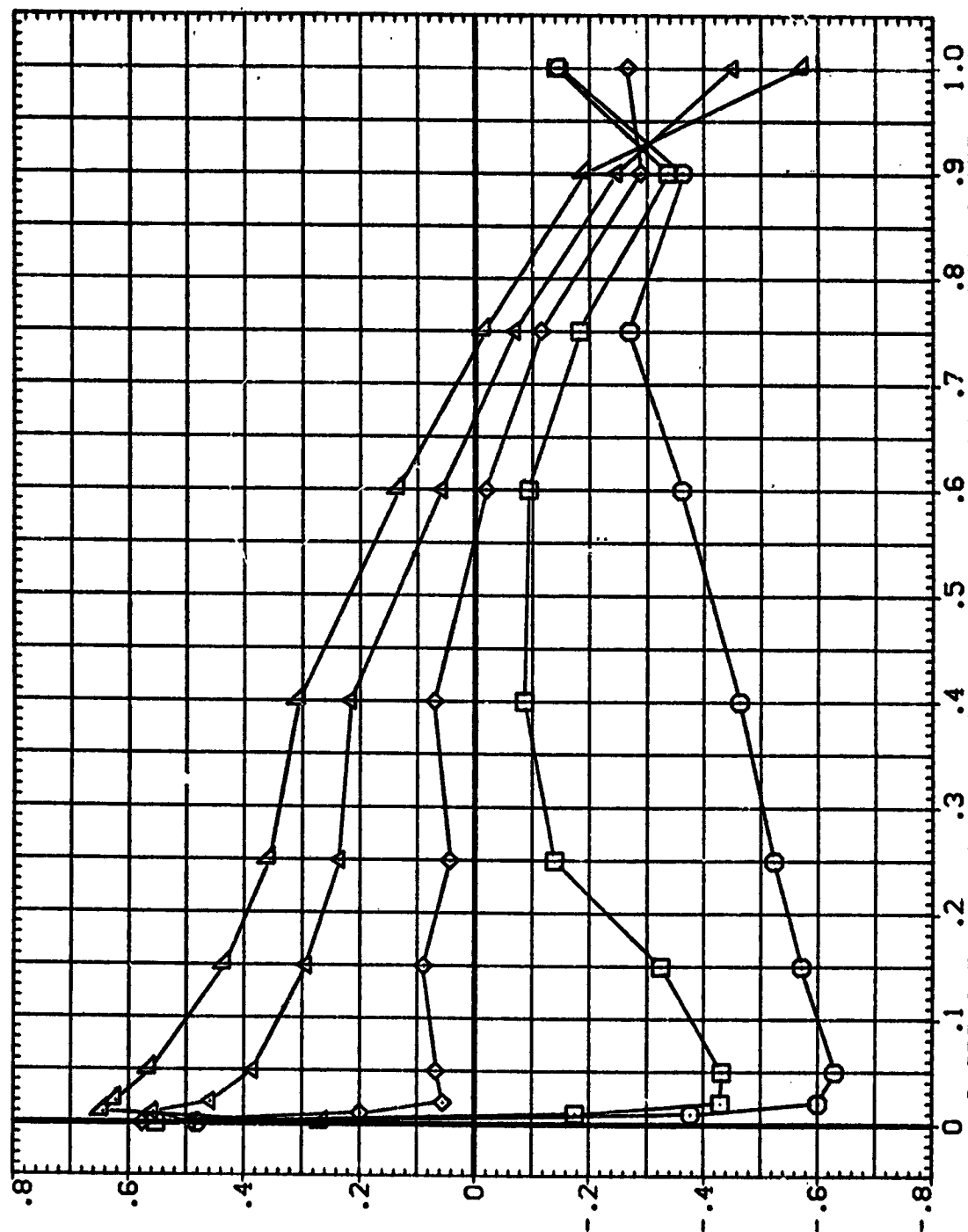
BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRK
 L-ELVN
 MACH

55.000
 .000
 1.250



SURFACE TAP PRESSURE COEFFICIENT, CP

CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .972
 BETA .000

RUDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

SPDRK
 L-ELVN
 MACH
 55.000
 .000
 1.250

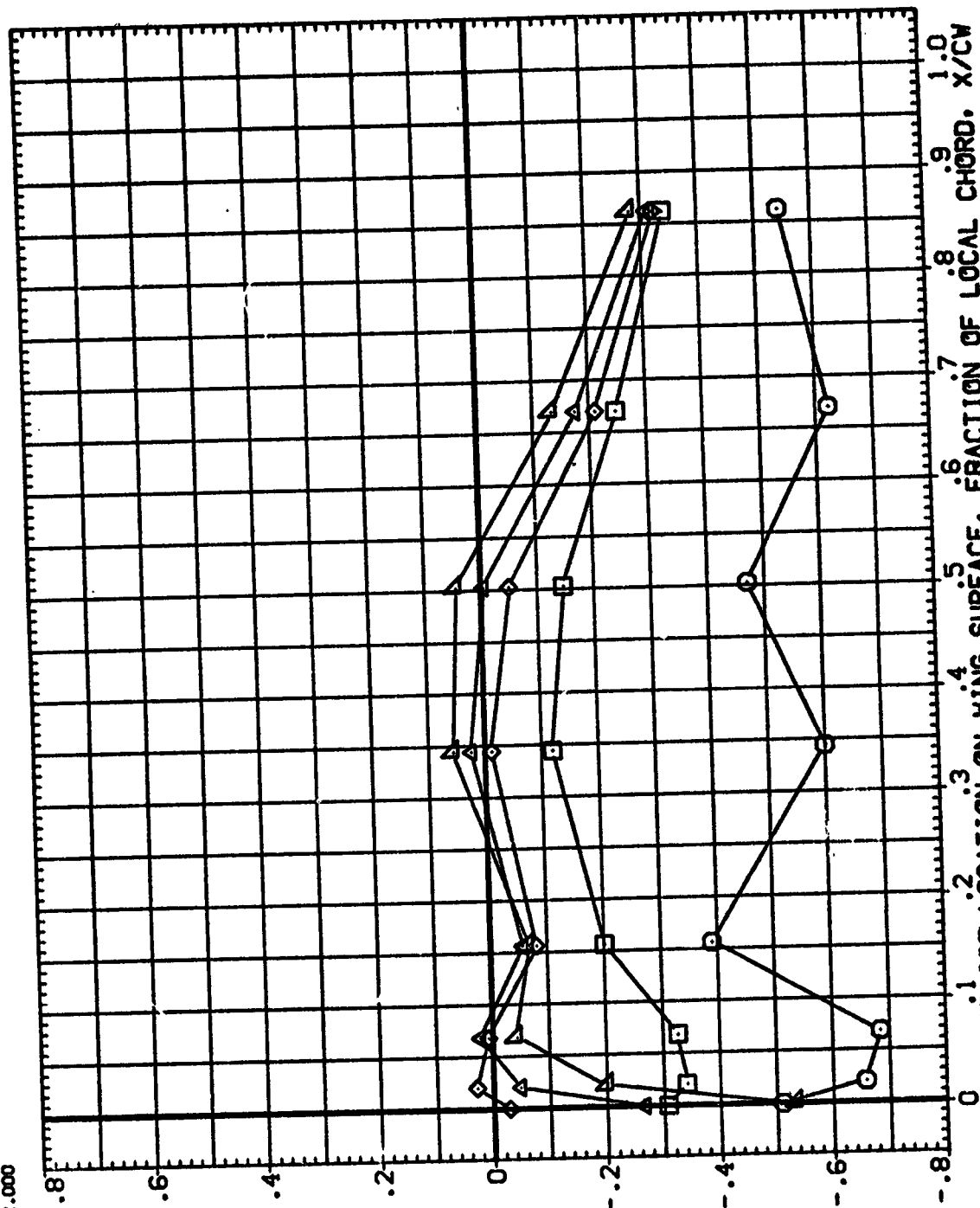


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C R ORB LEFT WING BOT(1E8L02)

SYMBOL
 □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN .299
 BETA 4.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPDRK 55.000
 16.300 L-ELVN .000
 .000 MACH 1.250

SURFACE TAP PRESSURE COEFFICIENT, CP

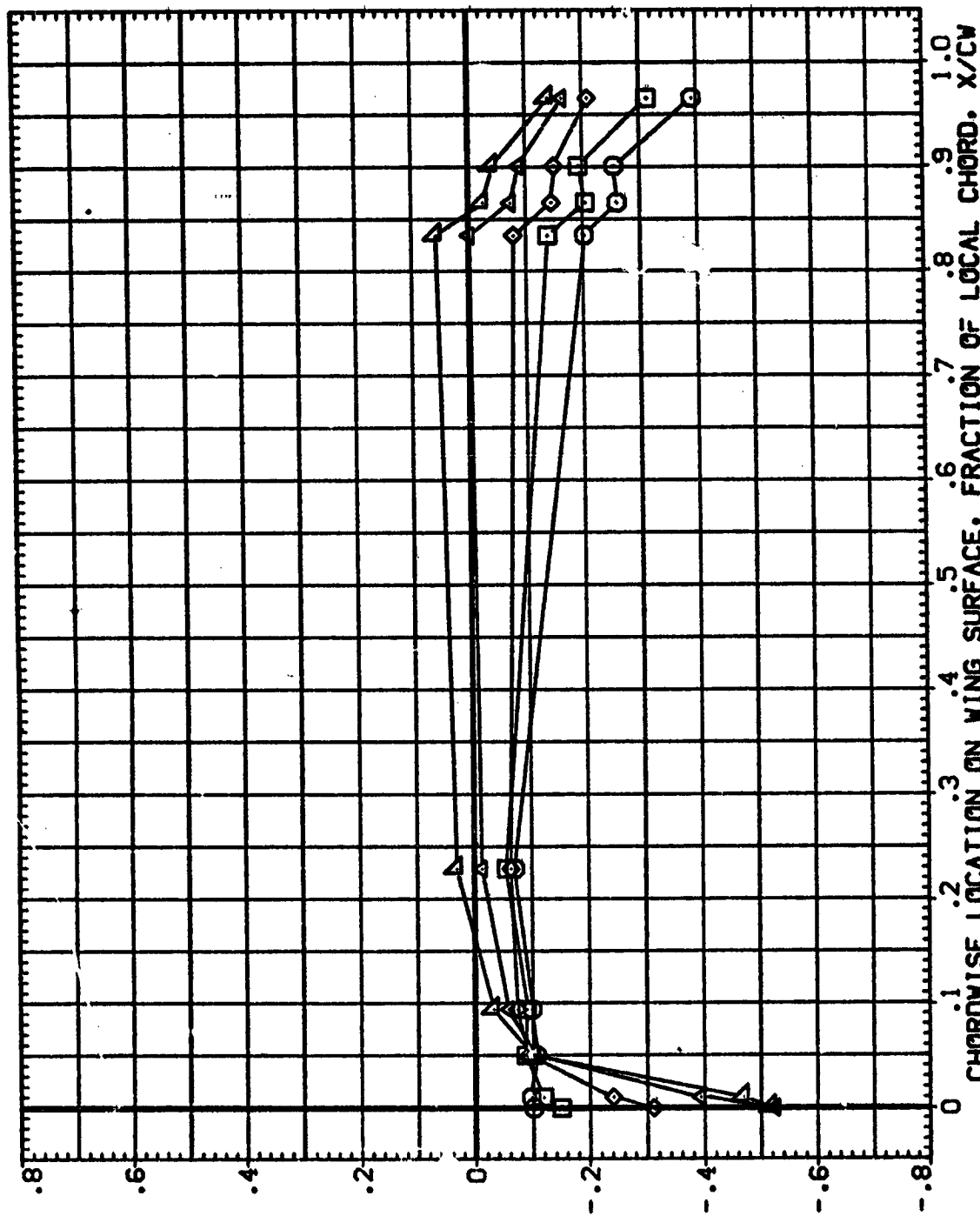


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .427

BETA
 4.000

PARAMETRIC VALUES

RUDDER	SPDRBK	SS.000
BDFLAP	.000	.000
R-ELVN	16.300	1.250
	.000	

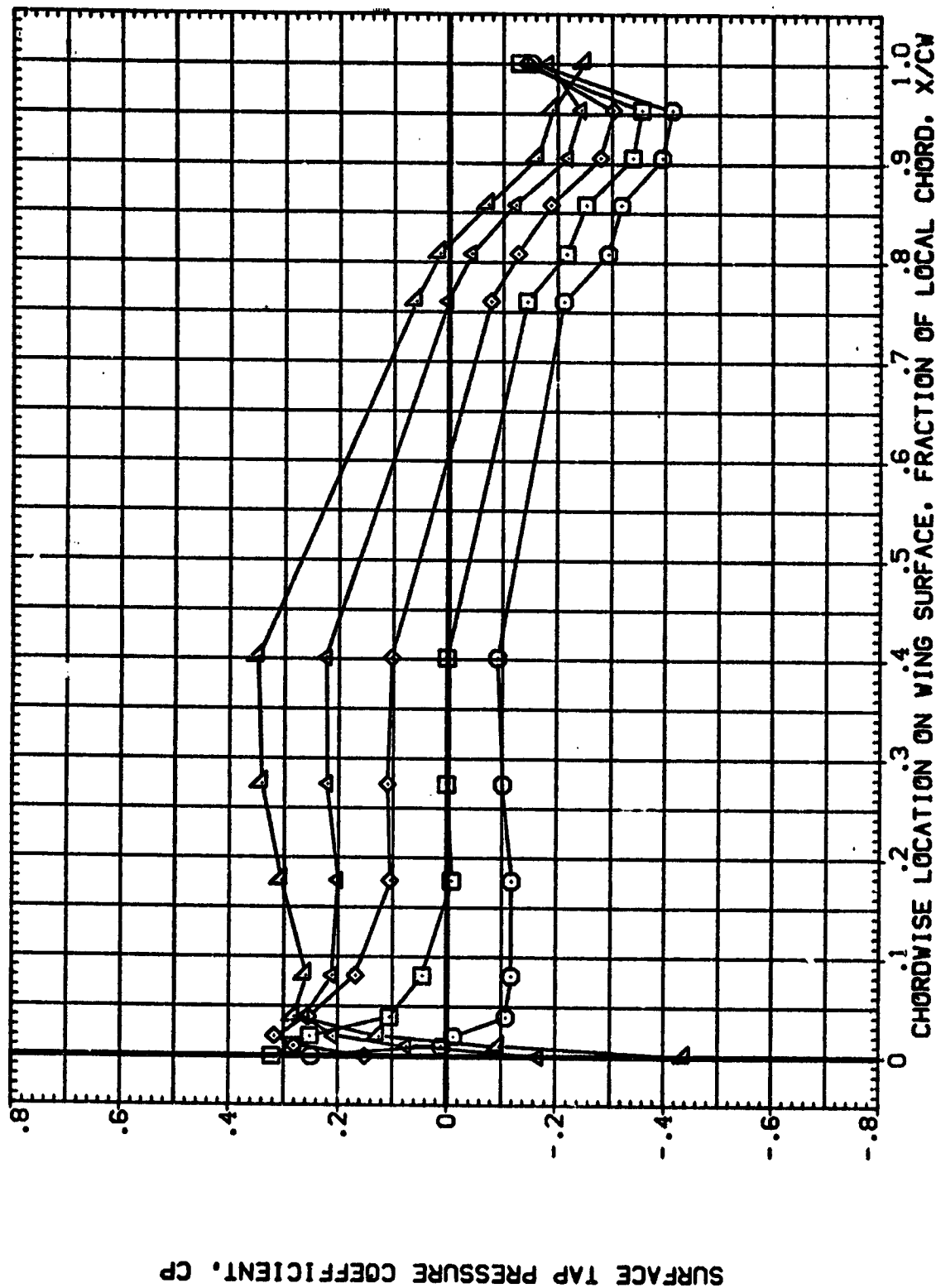


FIG. 9 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V
 .673

BETA
 4.000

PARAMETRIC VALUES

RUDDER	SPDRX	55.000
BOFLAP	.000	
R-ELVN	16.300	
	.000	
	L-ELVN	.000
	MACH	1.250

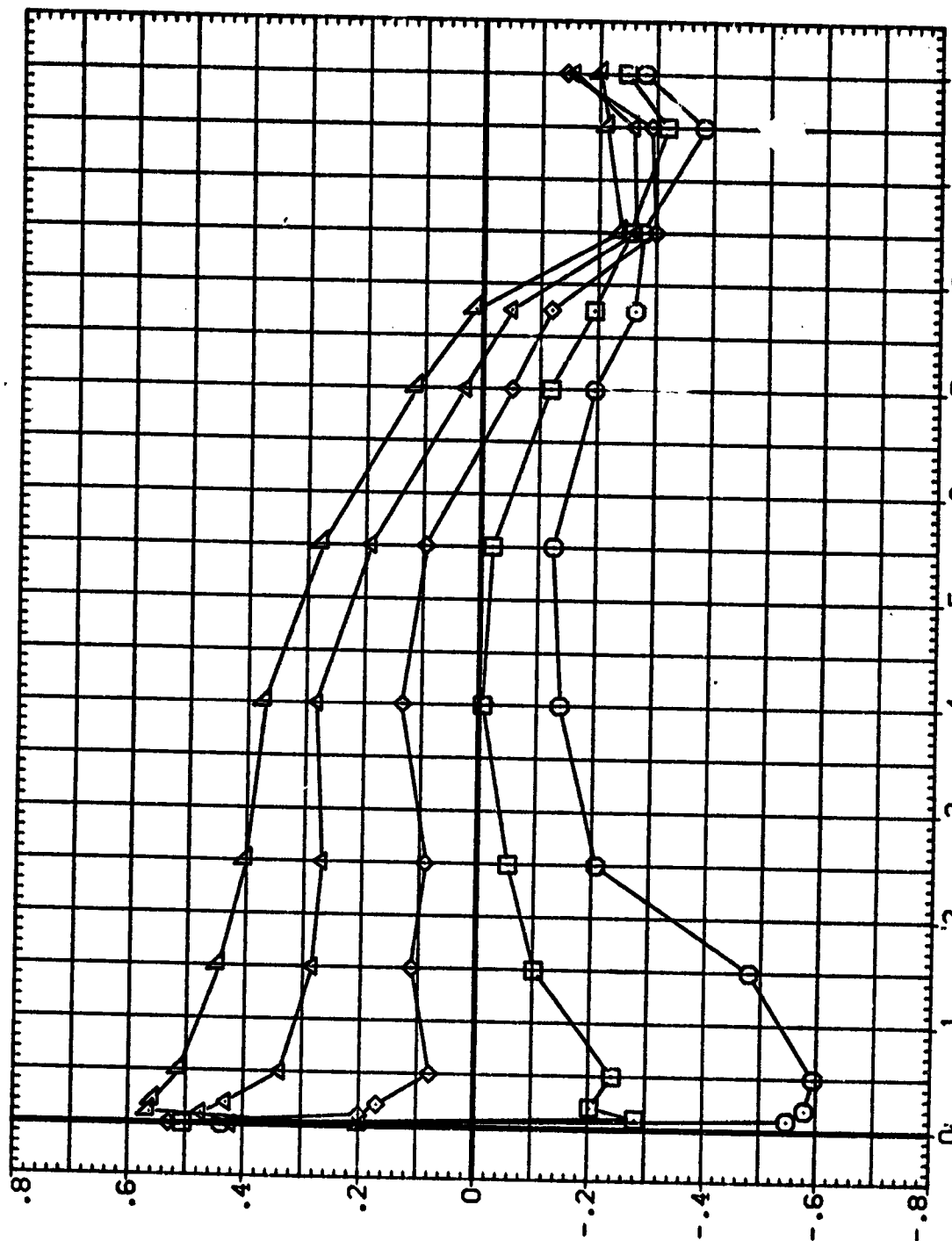


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.887	4.000	BOFLAP	.000 SPDRBK 55.000
◇	.000			R-ELVN	.000 L-ELVN .000
□	4.000				.000 MACH 1.250
△	8.000				
▽	12.000				

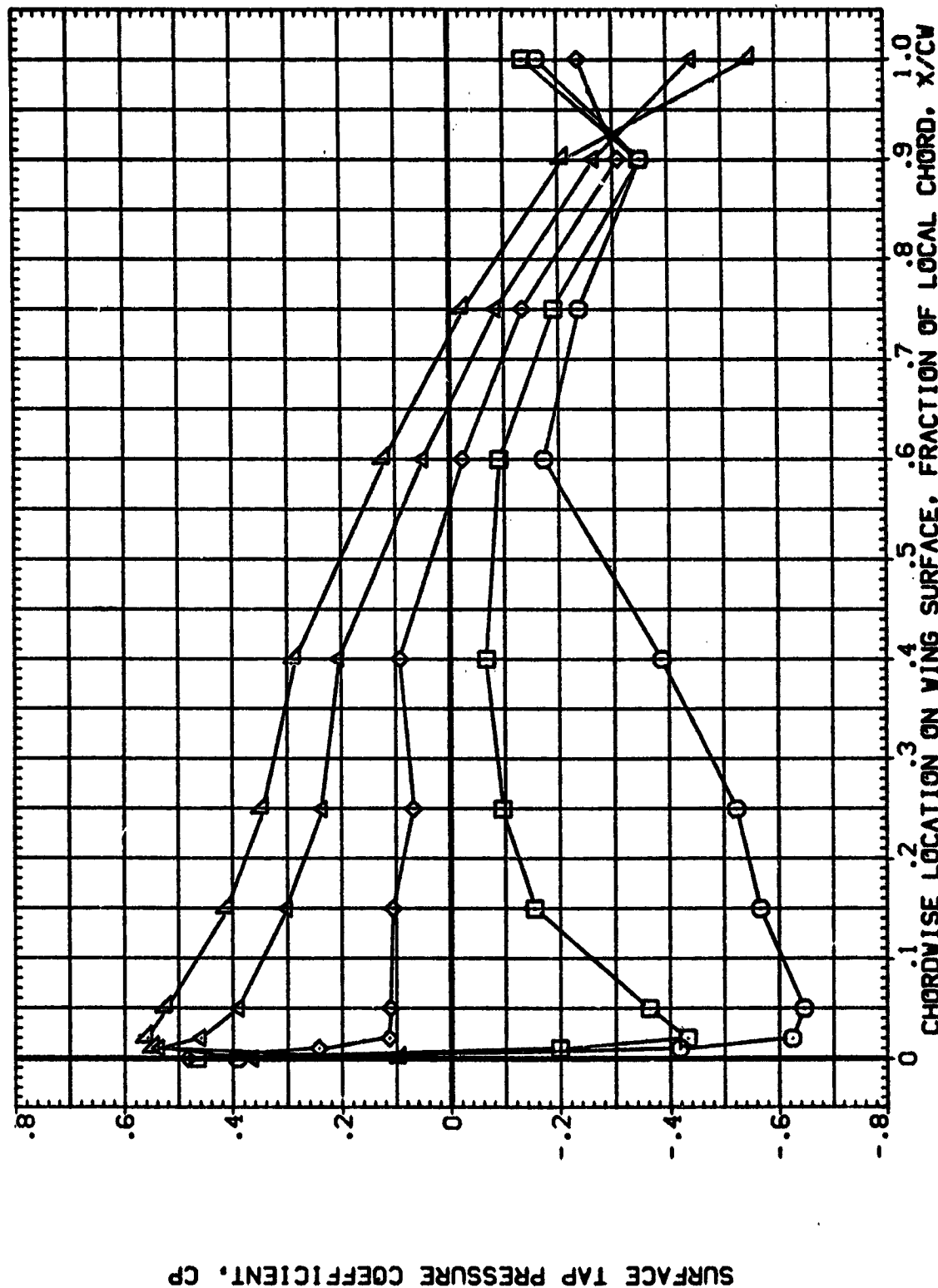


FIG. 9 LEFT WING BOTTOM SURFACE ELEVN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L02)

SYMBOL
▽
◇
□
△

ALPHA
-4.000
.000
4.000
8.000
12.000

2Y/BV BETA
.972 4.000

PARAMETRIC VALUES
RUDDER .000 SPOBRK .000
80FLAP 16.300 L-ELVN .000
R-ELVN .000 MACH 1.250

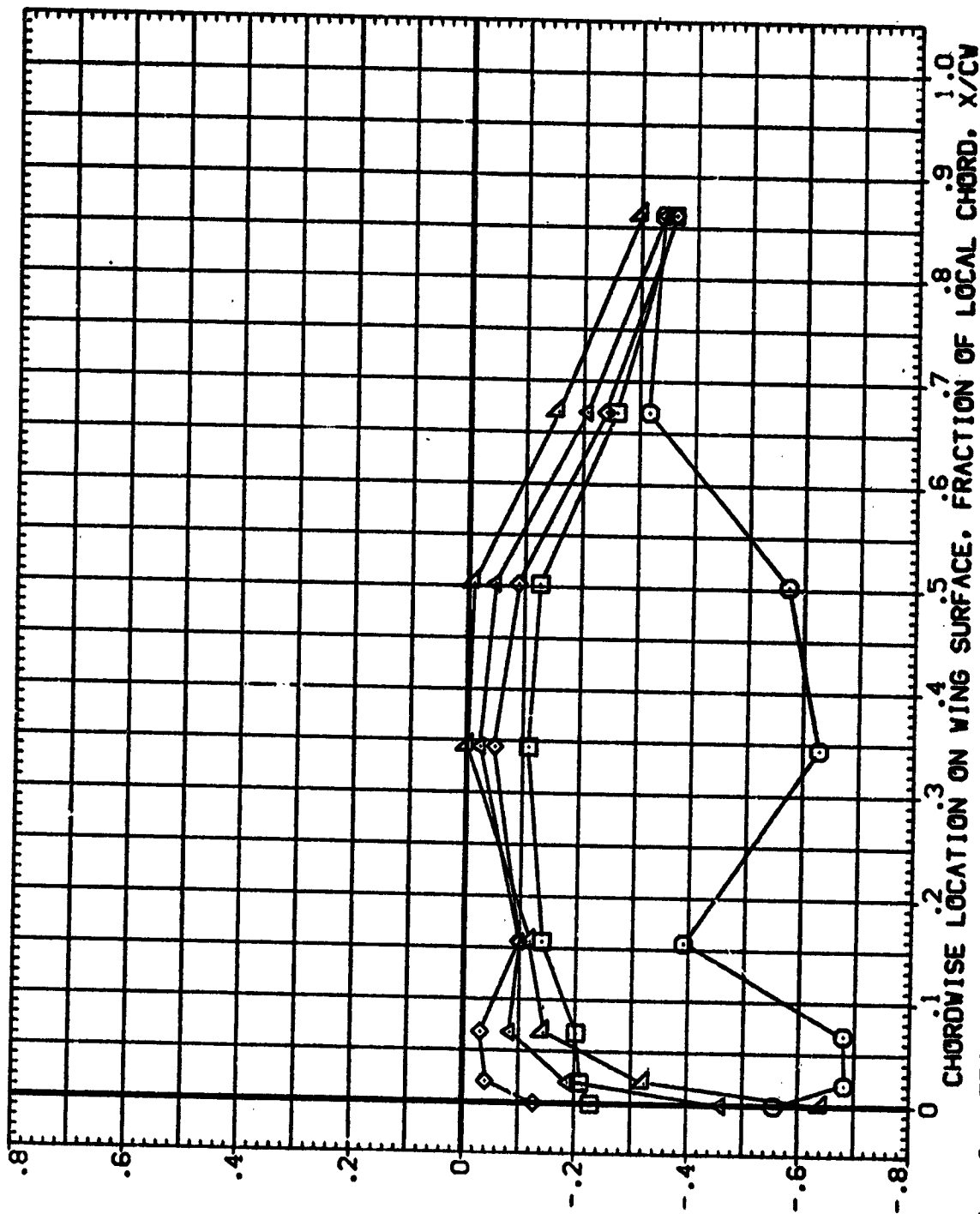


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L01)

PARAMETRIC VALUES

RUDDER	BOFLAP	R-ELVN	SPDRXK	L-ELVN	MACH
55.000	.000	.000	.000	.000	1.400

ALPHA 2V/BN BETA

-4.000	.299	-4.000
4.000		
8.000		
12.000		
16.000		

SYMBOL

▽
 △
 ◇
 □
 ○

SURFACE TAP PRESSURE COEFFICIENT, CP

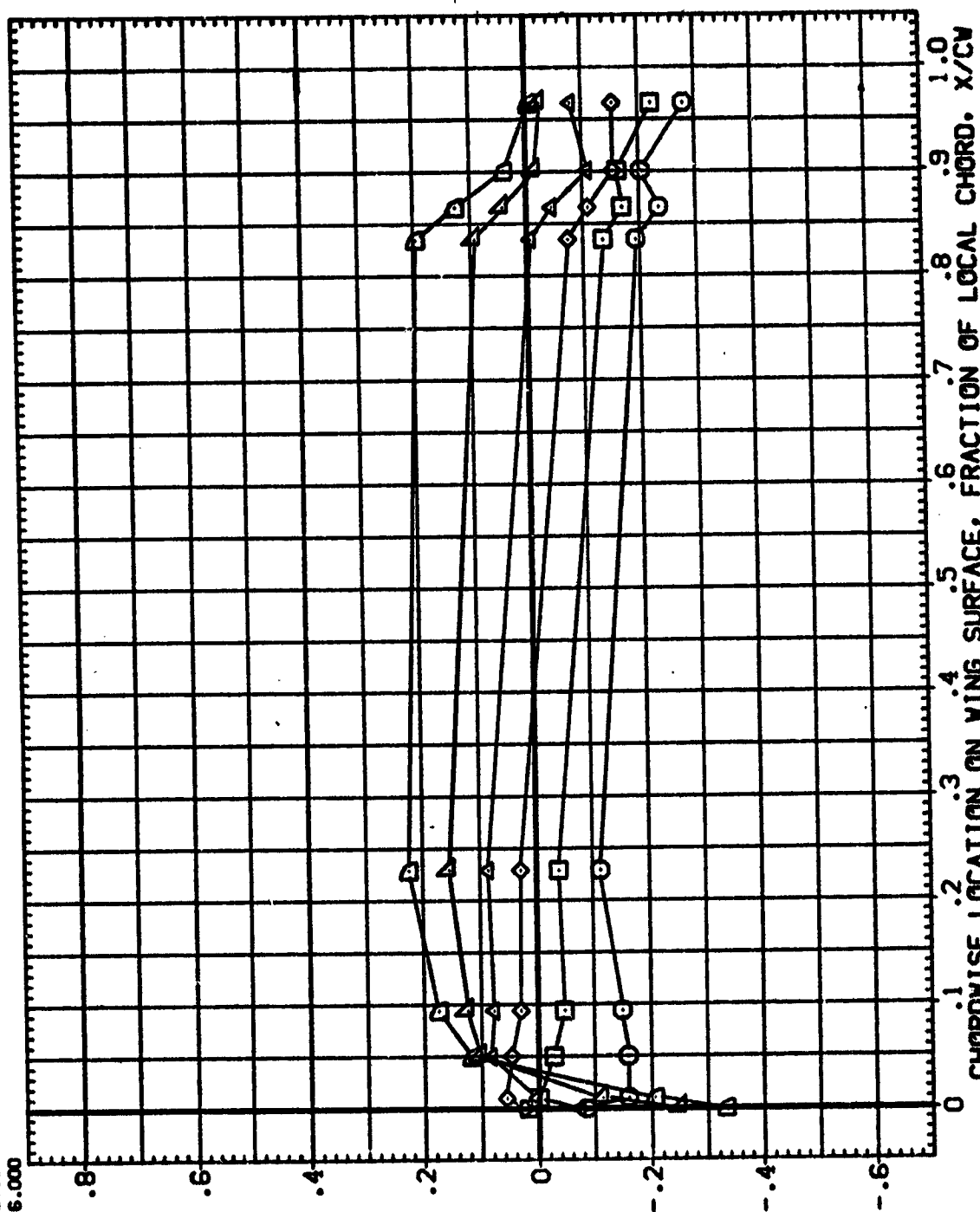


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

SYMBOL
 ▽ ▴ ◇ □

ALPHA 27/BN BETA
 -4.000 .427 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

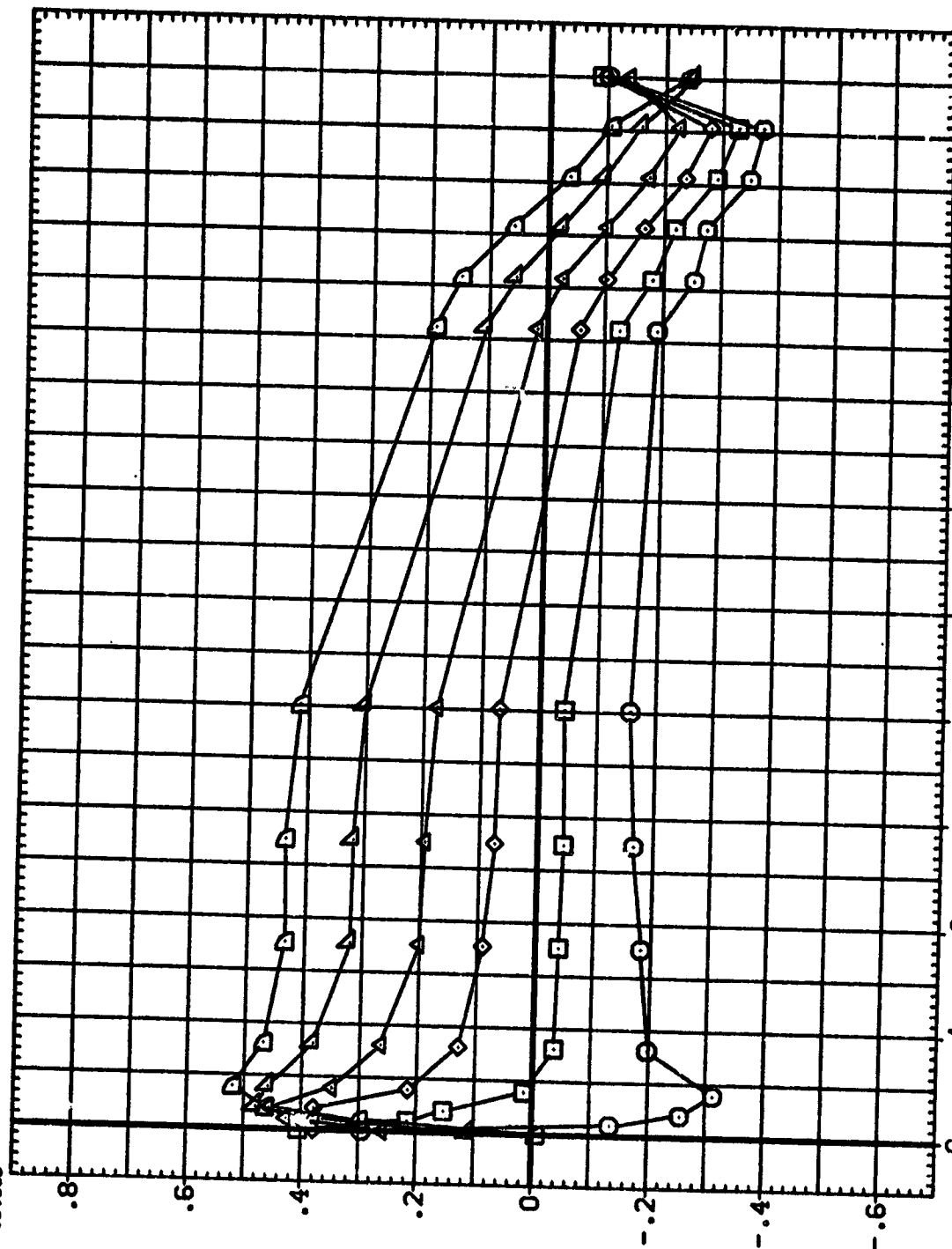


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES
 CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, x/c

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L01)

SYMBOL	ALPHA	21/8N	BETA	RUDDER	PARAMETRIC VALUES	SPDRBK	L-ELVN	MACH
□	-4.000	.573	-4.000	80FLAP	.000	.000	.000	1.400
◇	4.000			R-ELVN	.000	.000	.000	
△	8.000							
▽	12.000							
▽	16.000							

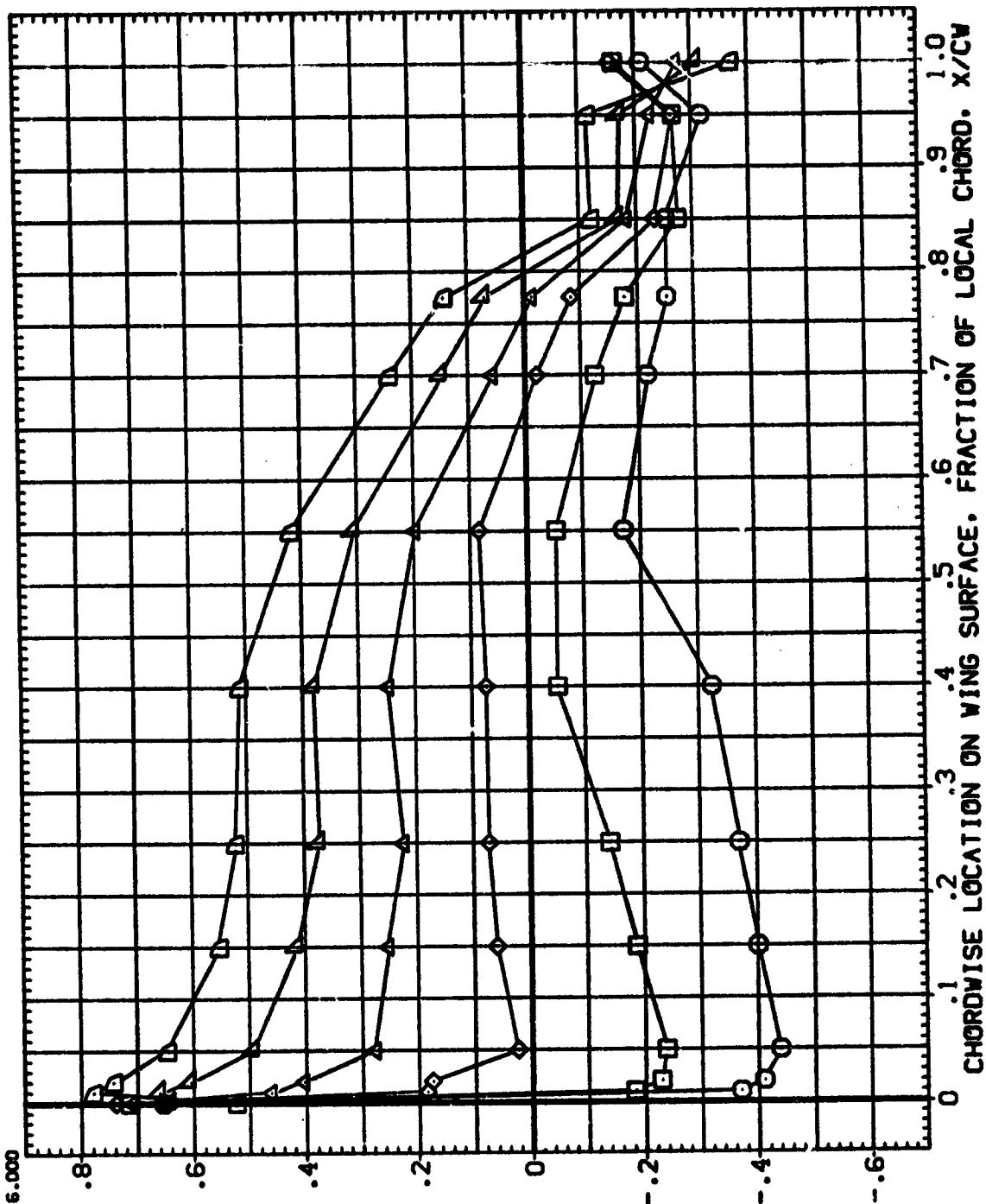


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

21/5V
 .887

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

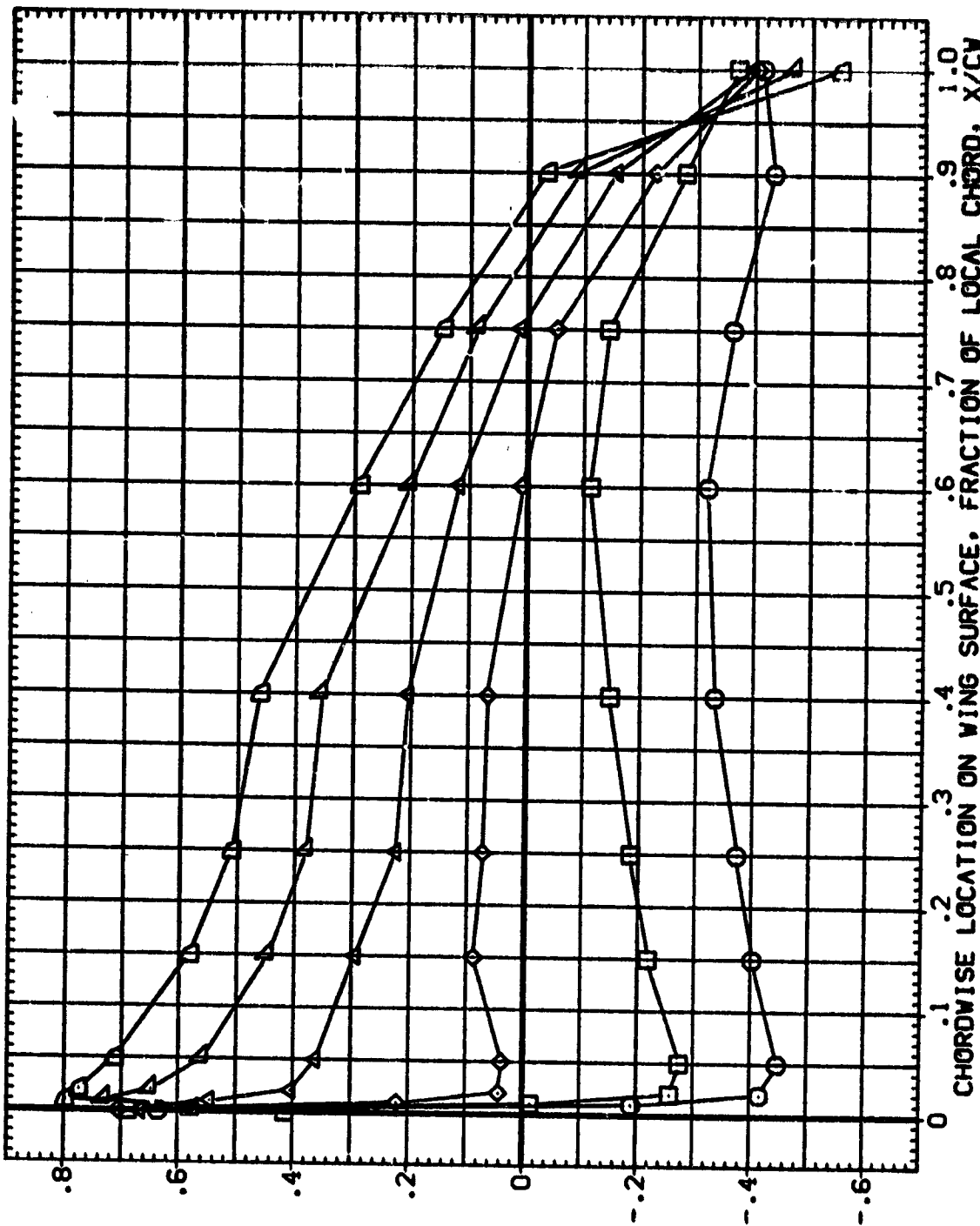


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L01)

PARAMETRIC VALUES			
RUDDER	.000	SPDBRK	55.000
80FLAP	16.300	L-ELVN	.000
R-ELVN	.000	HACH	1.400

ALPHA	ZY/BV	BETA
-4.000	.972	-4.000

SYMBOL
 □ ▽ ◆ ◇ ▽ ▽

SURFACE TAP PRESSURE COEFFICIENT, CP

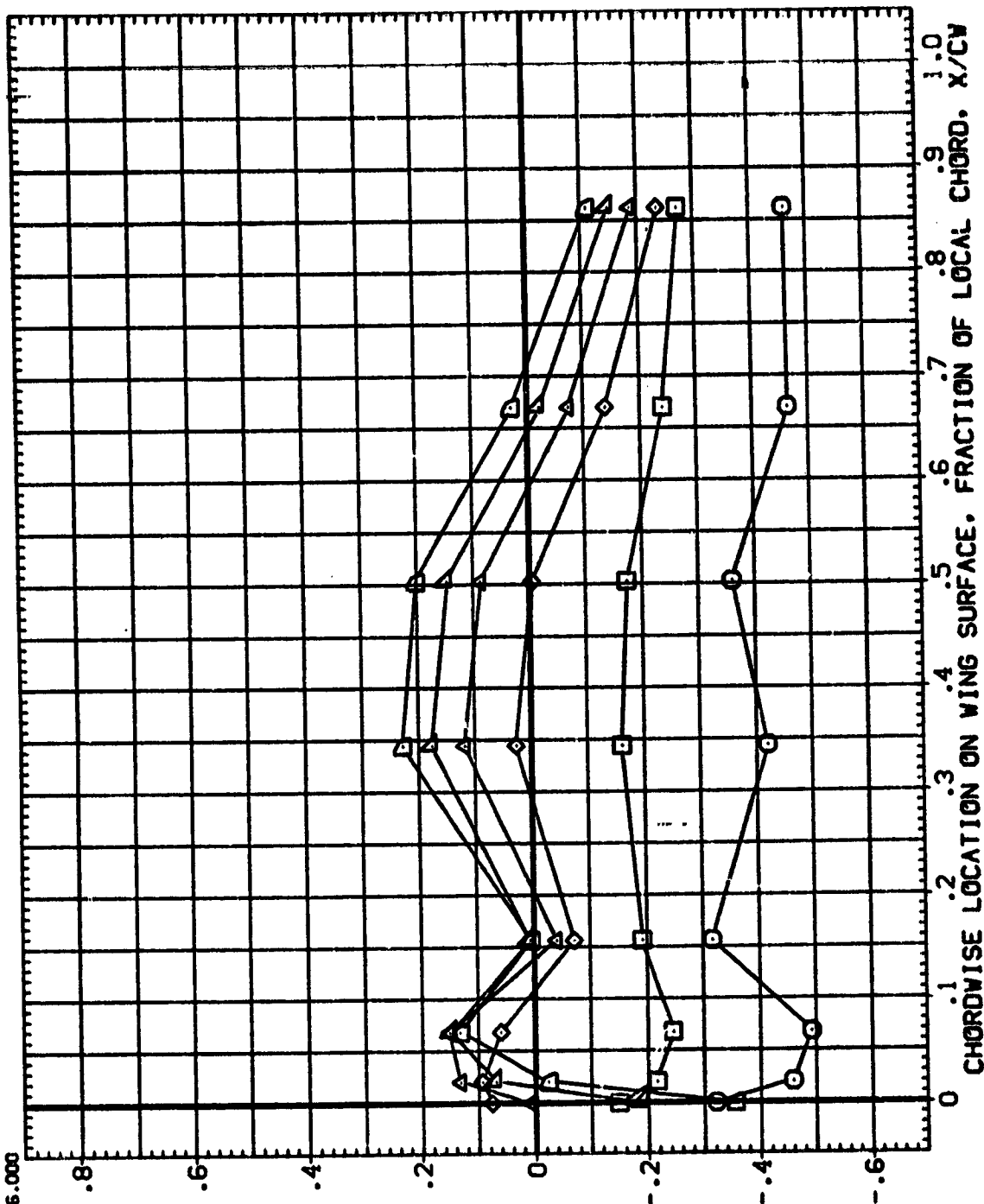


FIG. 9 LEFT WING BOTTOM SURFACE ELEVN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

SYMBOL
 ▽
 ◊
 □
 ▽
 ▽
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

21/BV
 .299

BETA
 .000

RUDGER
 16.300

SPDRBY
 .000

L-ELVN
 .000

MACH
 1.400

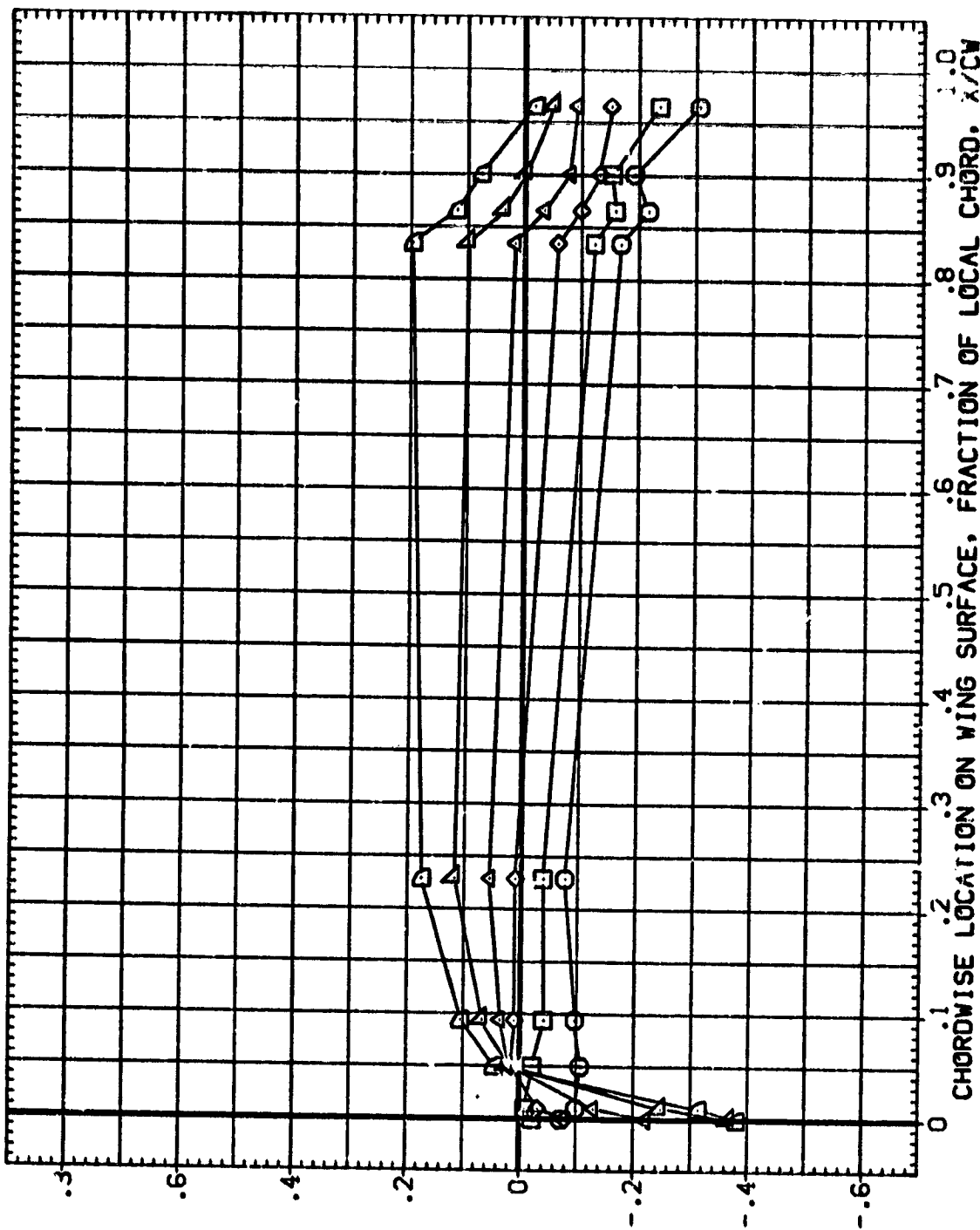


FIG. 9 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

PARAMETRIC VALUES
 .000 SP08RK 53.000
 16.300 L-ELVN .000
 .000 MACH 1.400

RUDDER
 R0FLAP
 R-ELVN

ALPHA 27/BV BETA
 -4.000 .000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ○
 □
 ◇
 △
 ▽
 ▽

SURFACE TAP PRESSURE COEFFICIENT, CP

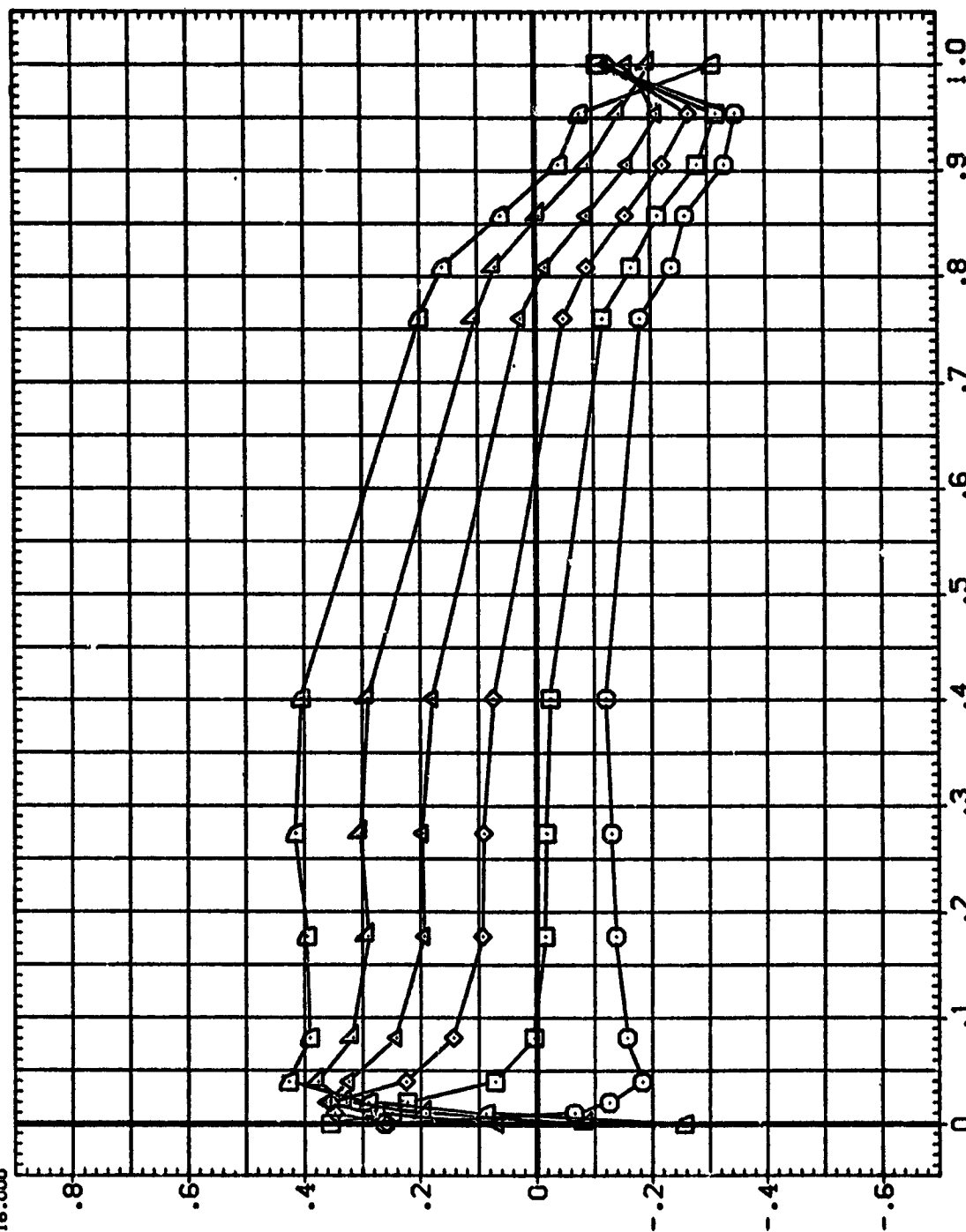


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

PARAMETRIC VALUES	
.000	SP08RK
16.300	L-ELVN
.000	MACH
55.000	
.000	
1.400	

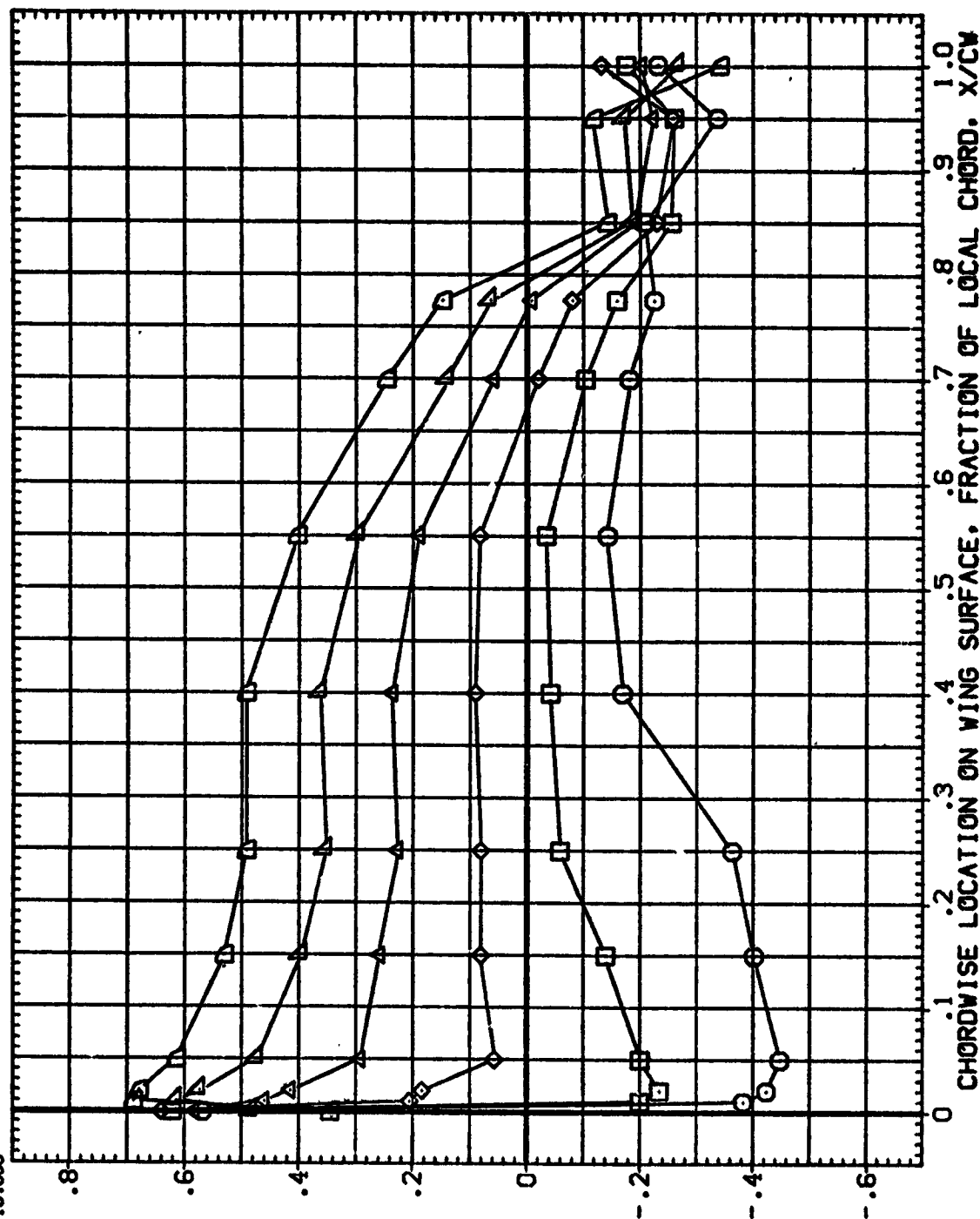


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L01)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.887	.000	BDFLAP	.000
□	.000			R-ELVN	.000
◇	4.000			MACH	1.400
				SPDRK	55.000
				L-ELVN	.000

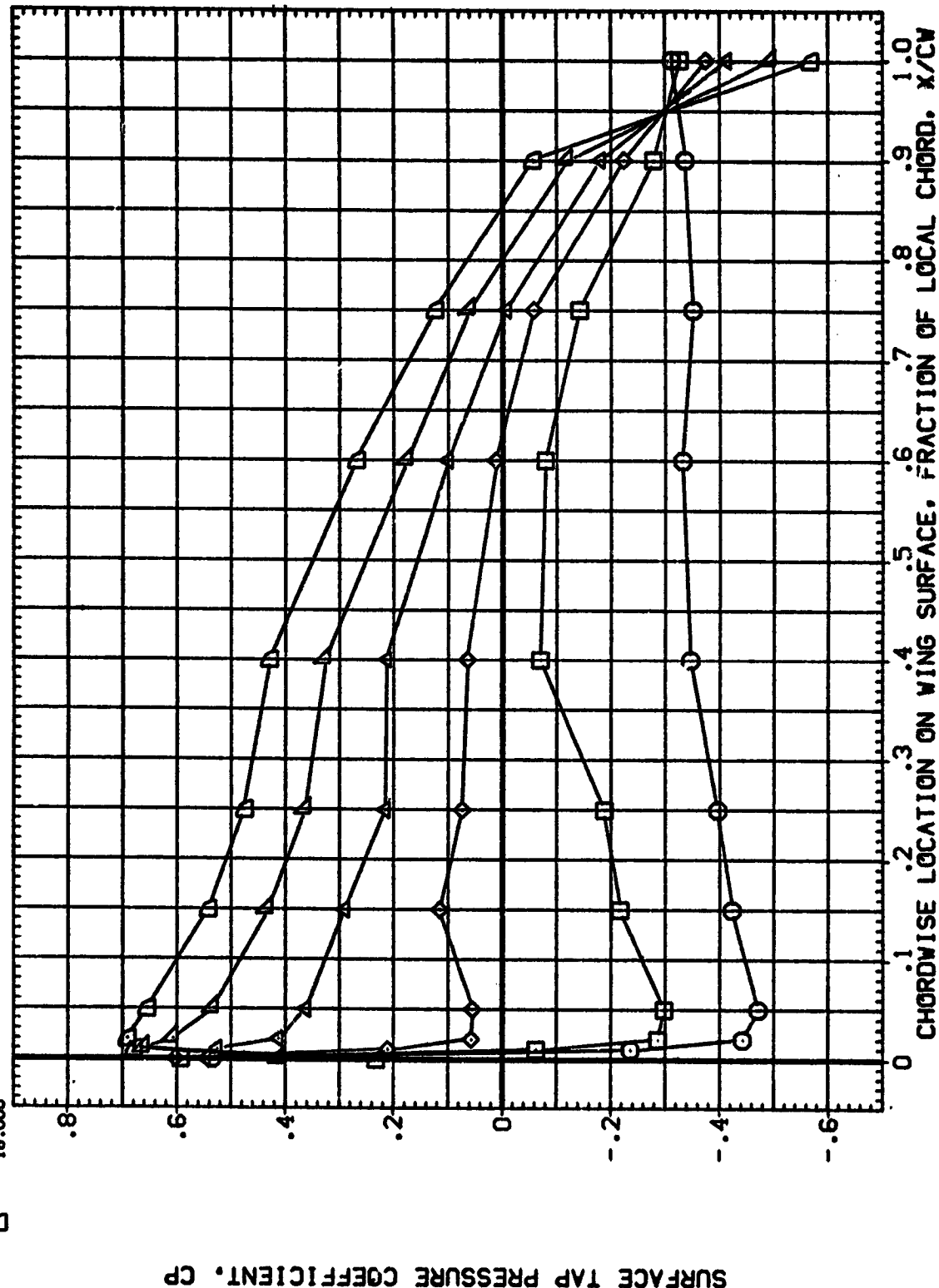


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

SYMBOL
 □ ◇ △ ▽ ▹ ▸

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

ZY/BN
 .972

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

SPDRK
 L-ELVN
 MACH

55.000
 .000
 1.400

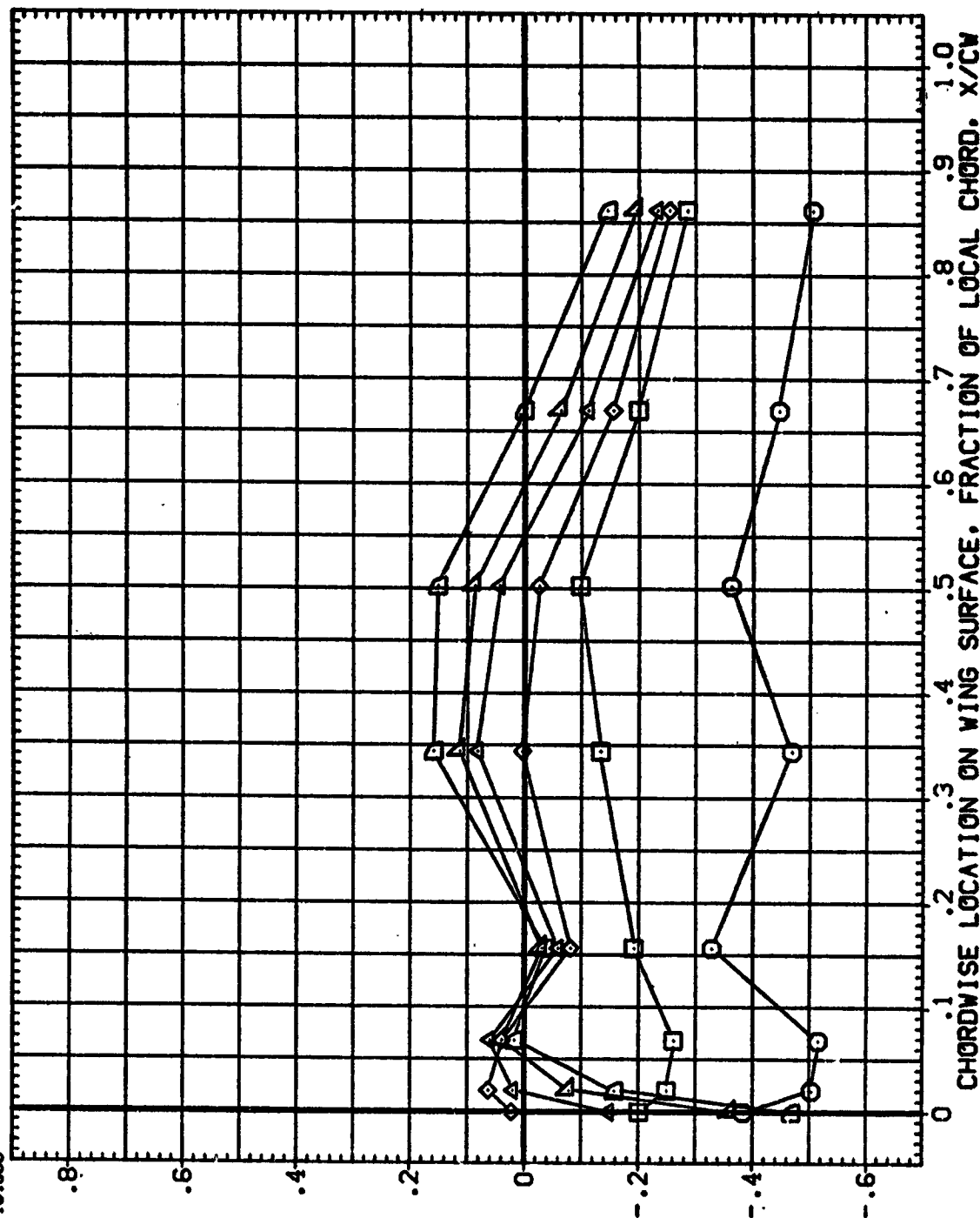
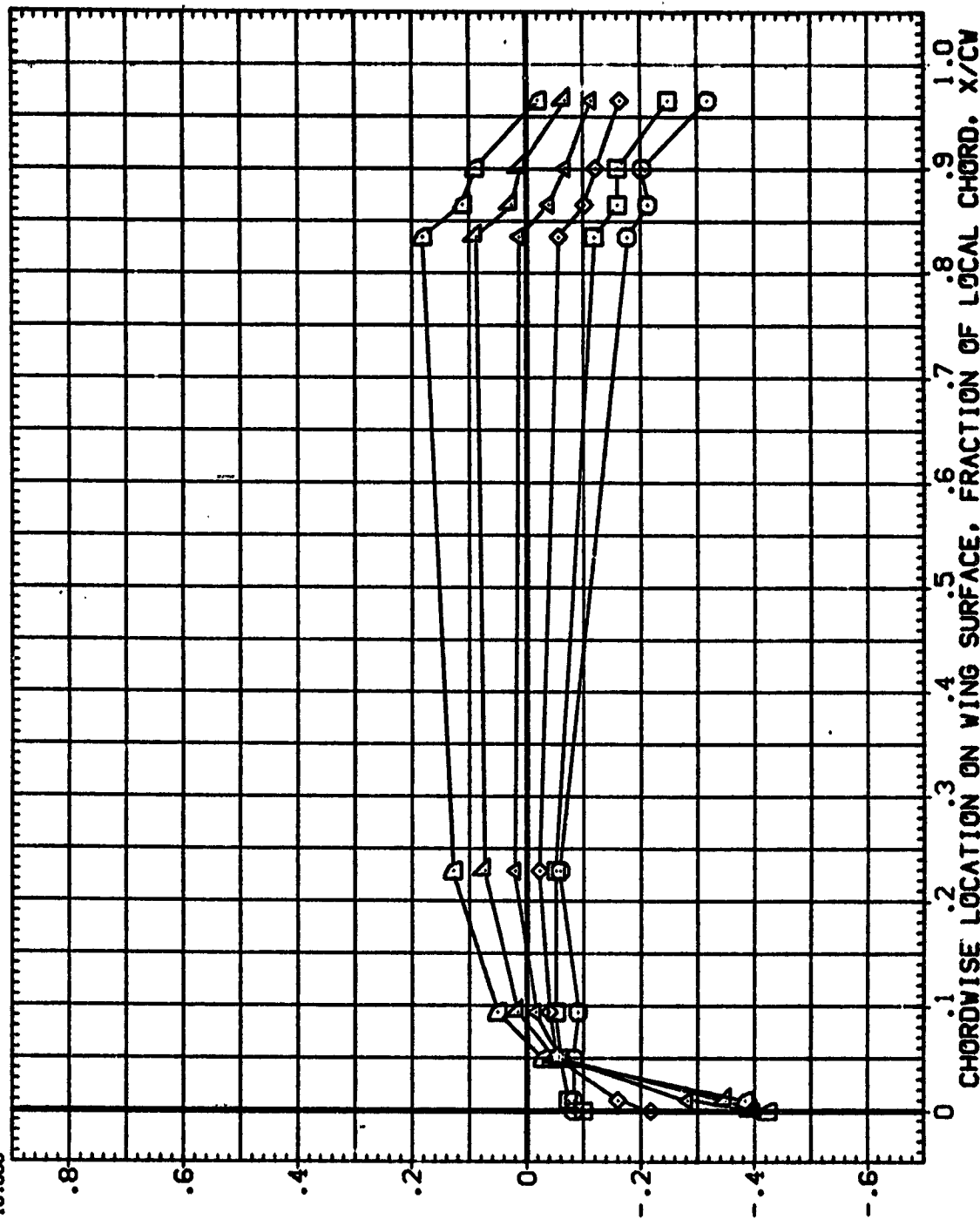


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L01)

SYMBOL	ALPHA	2Y/BN	BETA			PARAMETRIC VALUES
○	-4.000	.299	4.000	RUDDER	.000	SPDRBK 55.000
□	.000			BOFLAP	16.300	L-ELVN .000
◇	4.000			R-ELVN	.000	MACH 1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(IE8L01)

PARAMETRIC VALUES
 .000 SPDRK 55.000
 16.300 L-ELVN .300
 .000 MACH 1.400

RUDDER
 80FLAP
 R-ELVN

27/BN BETA
 .427 4.000

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ △ ▽ ▹ ▸ ▹ ▸

SURFACE TAP PRESSURE COEFFICIENT, CP

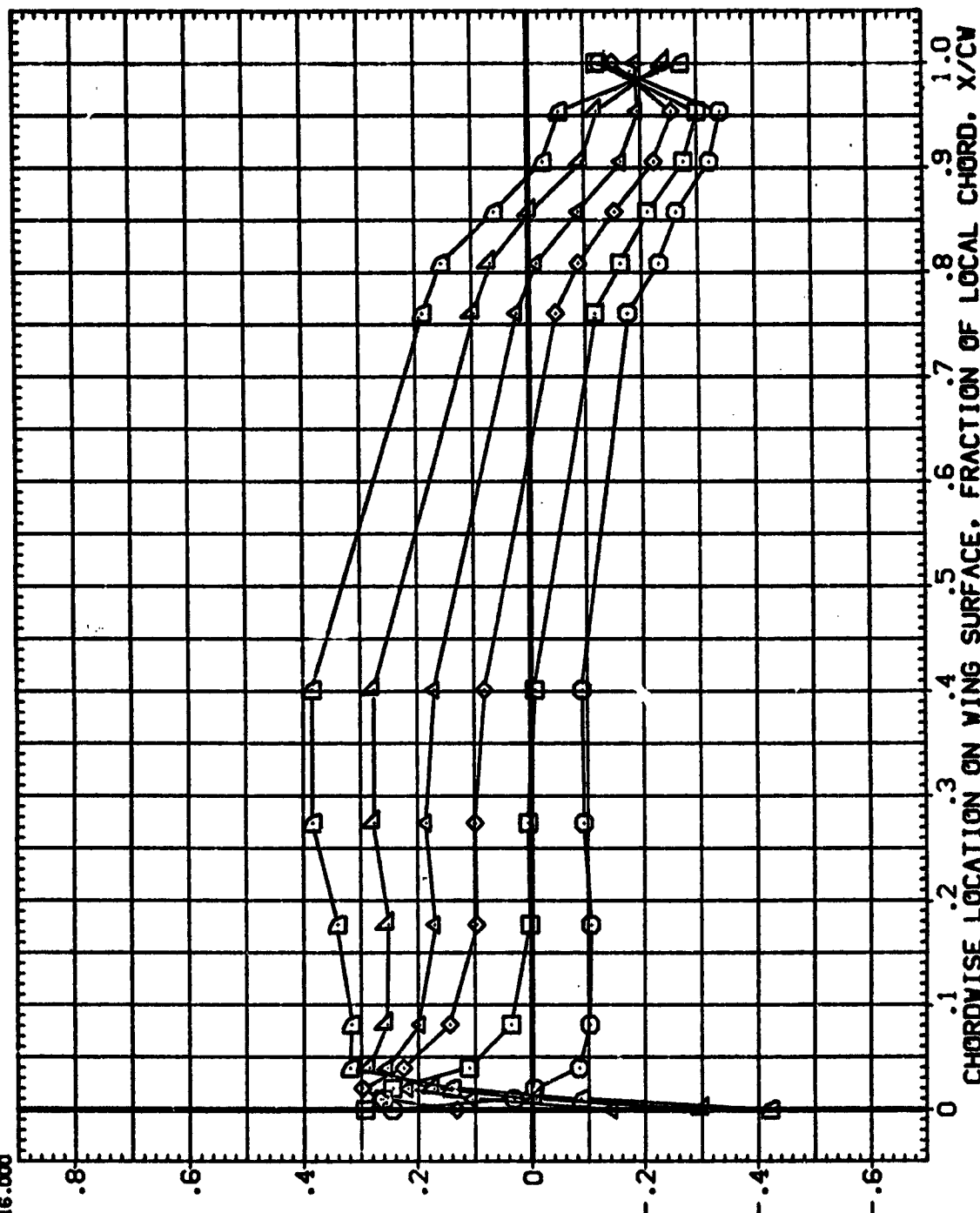


FIG. 9 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

SYMBOL
 ▽ ▴ ◊ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

21/8V BETA
 .673 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

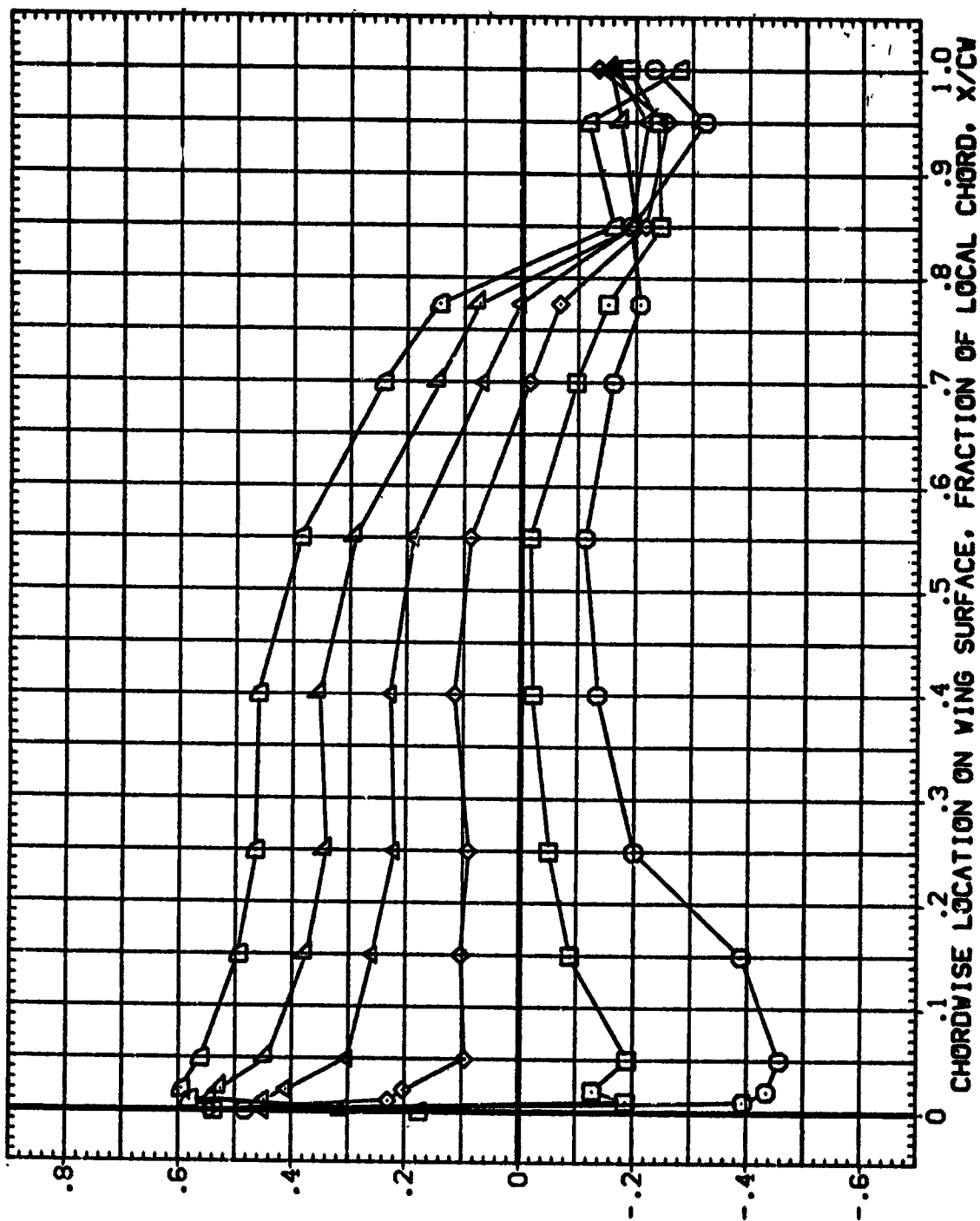


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

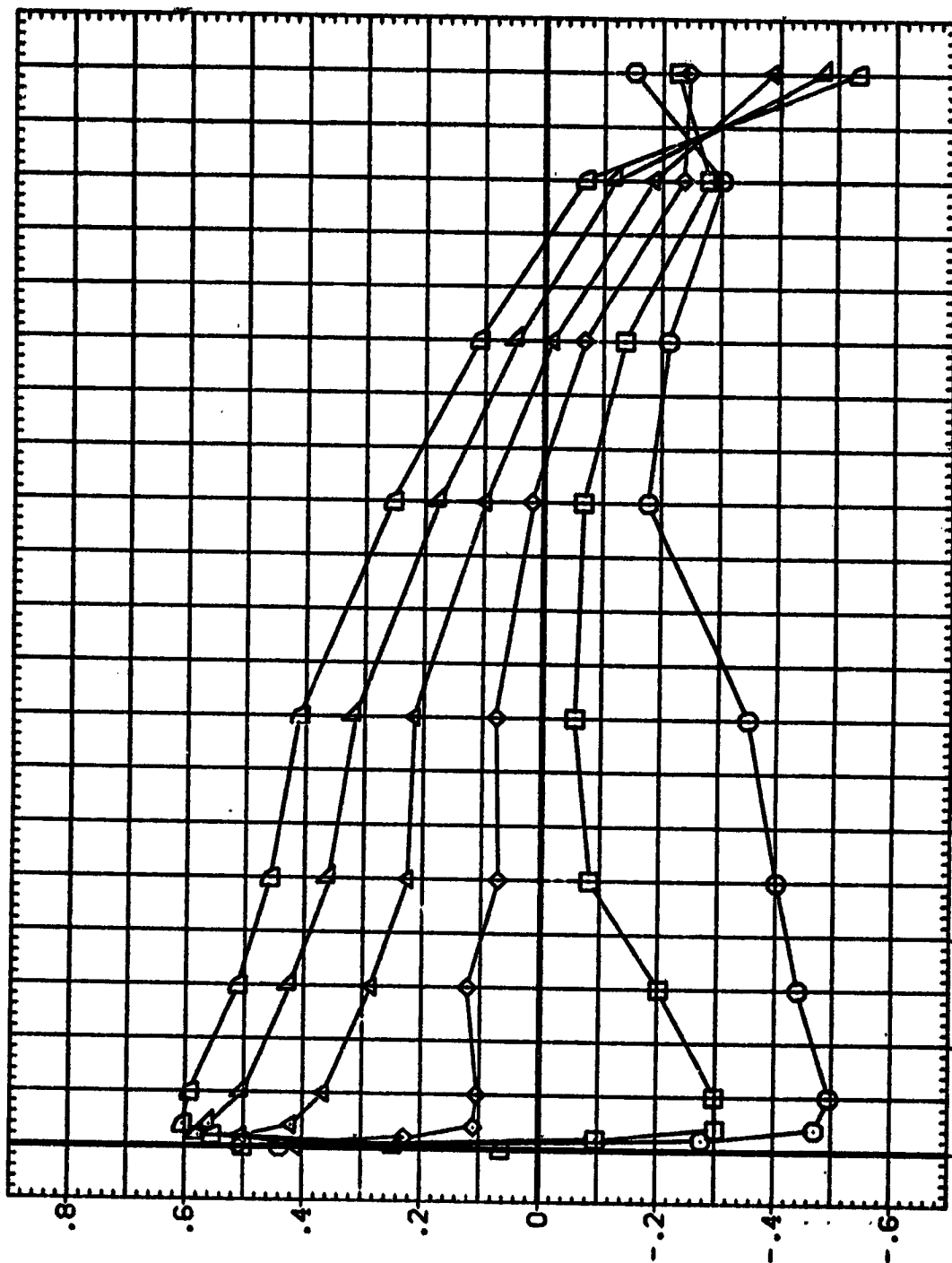
AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

SYMBOL
 □ ▽ ◆ ◇ ▽ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

27/BN .687
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES
 CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING BOT(1E8L01)

SYMBOL
 □ ◇ △ ▽ ▢ ▣ ▤ ▥ ▦ ▧ ▨ ▩

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

27/8N .572
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

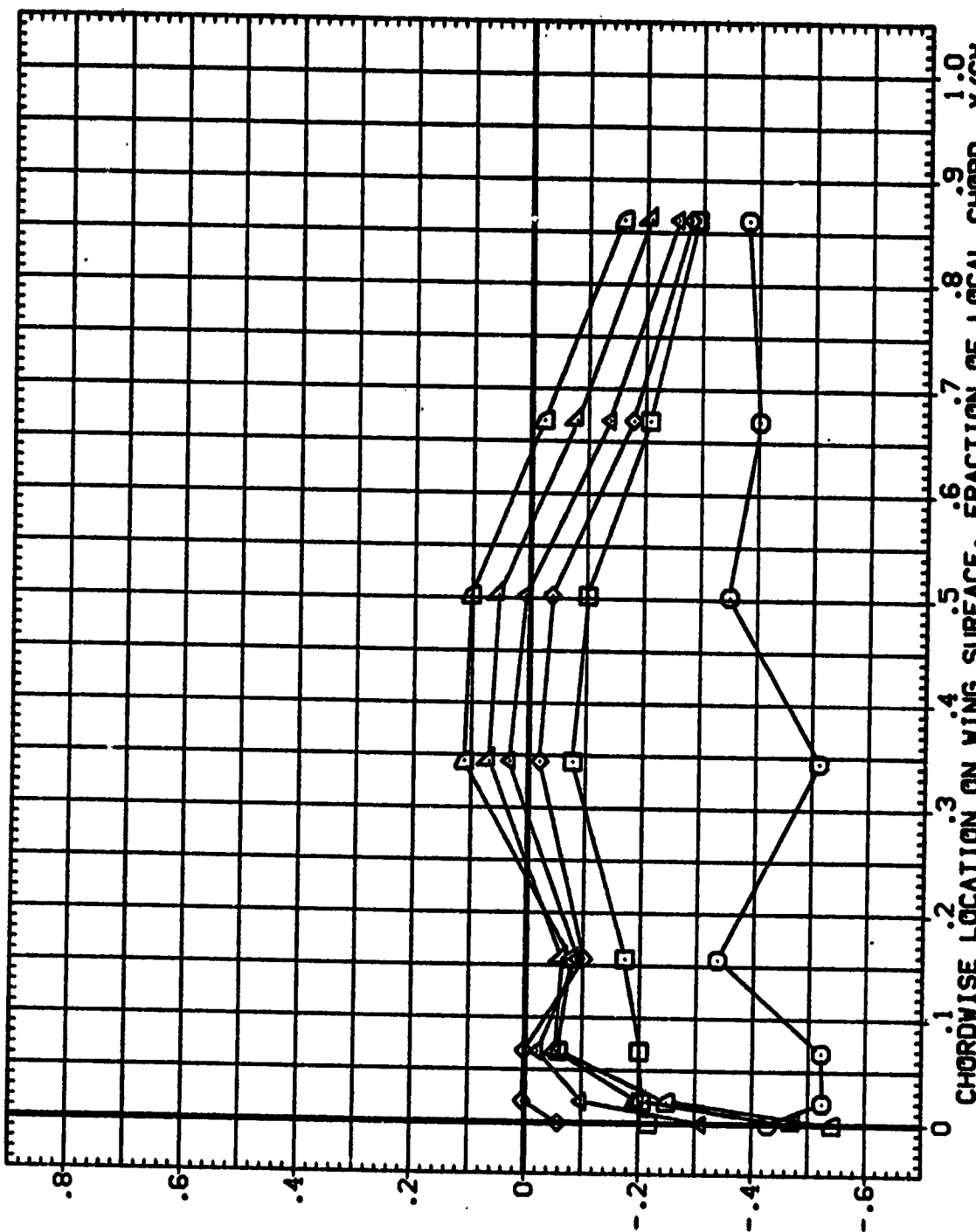


FIG. 9 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA 21/8N BETA
 -4.000 .299 -8.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER -3.000 SPCEBX 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

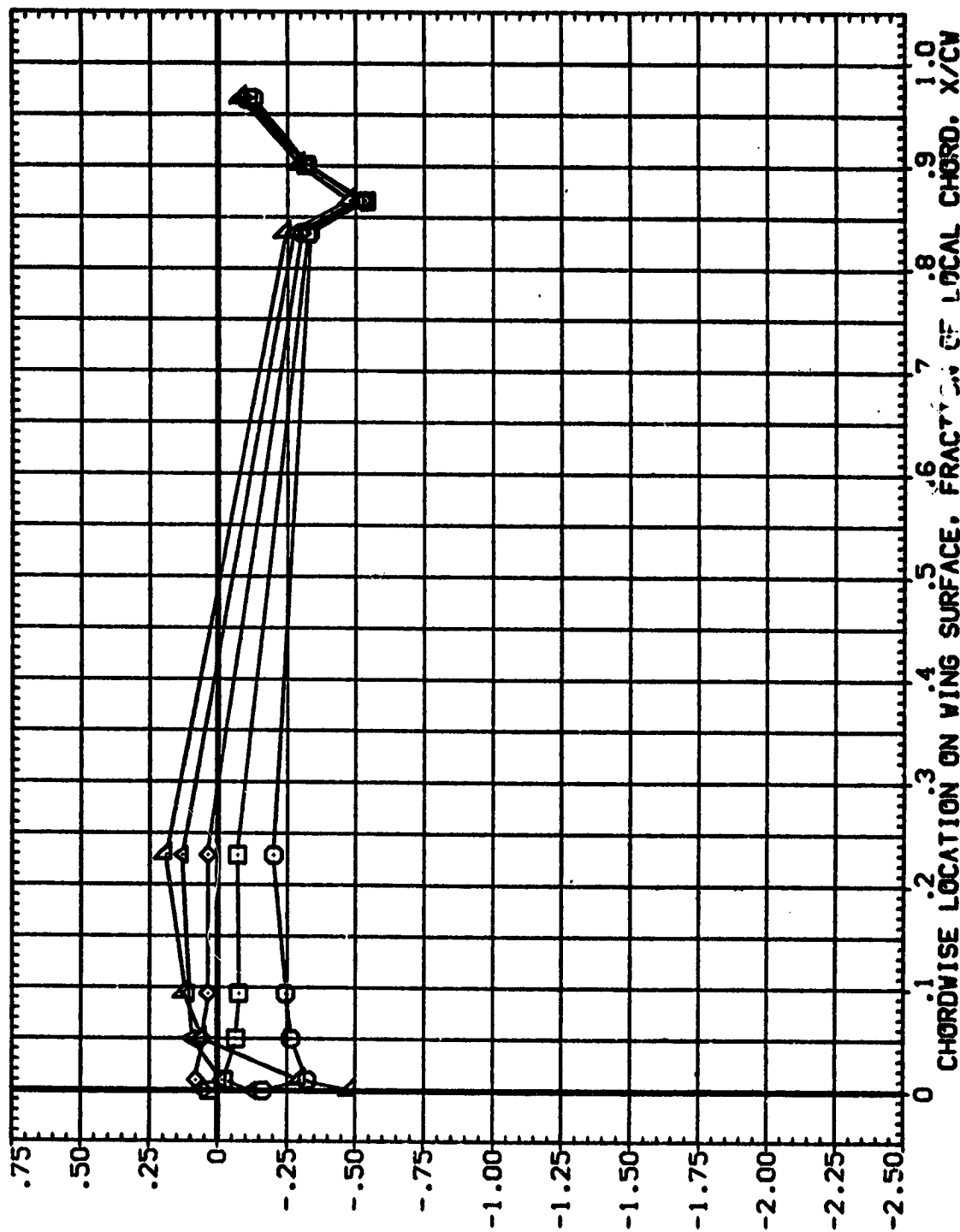


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL	ALPHA	2 γ /BV	BETA	RUDER	PARAMETRIC VALUES
▽	-4.000	.427	-8.000	80FLAP	-5.000
◇	.000			R-ELVN	16.300
□	4.000				-10.000
△	8.000				.600
	12.000				

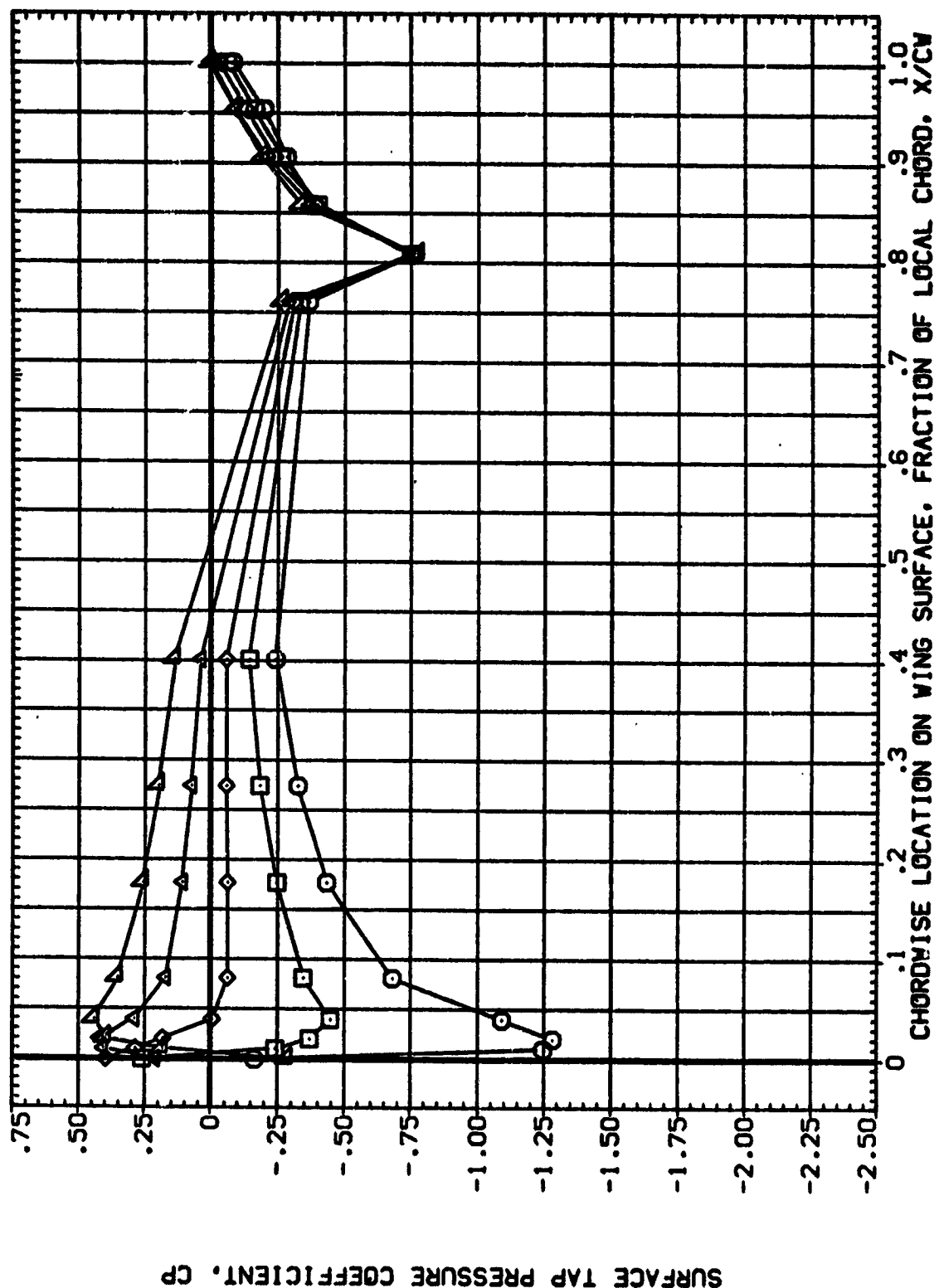


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BN
 .673

BETA
 -8.000

PARAMETRIC VALUES
 RUDDER
 BDFLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPDRNK
 L-ELVN
 MACH
 55.000
 -10.000
 .600

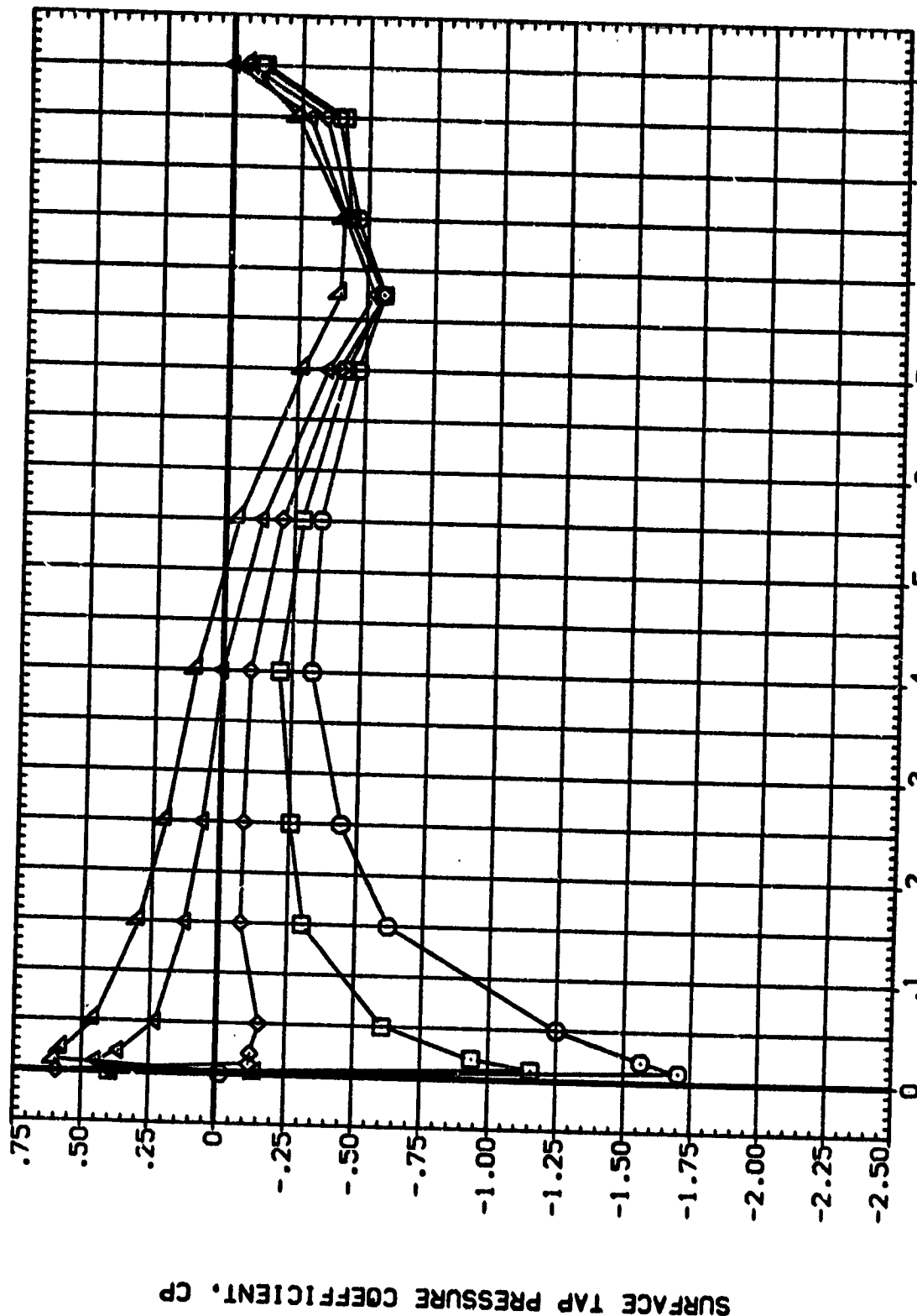


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ◆
 ◇
 □
 △

ALPHA 2V/BN BETA
 -4.000 .887 -8.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDBRK -55.000
 BGFAP 16.306 L-ELVN -10.000
 R-ELVN -12.000 MACH .500

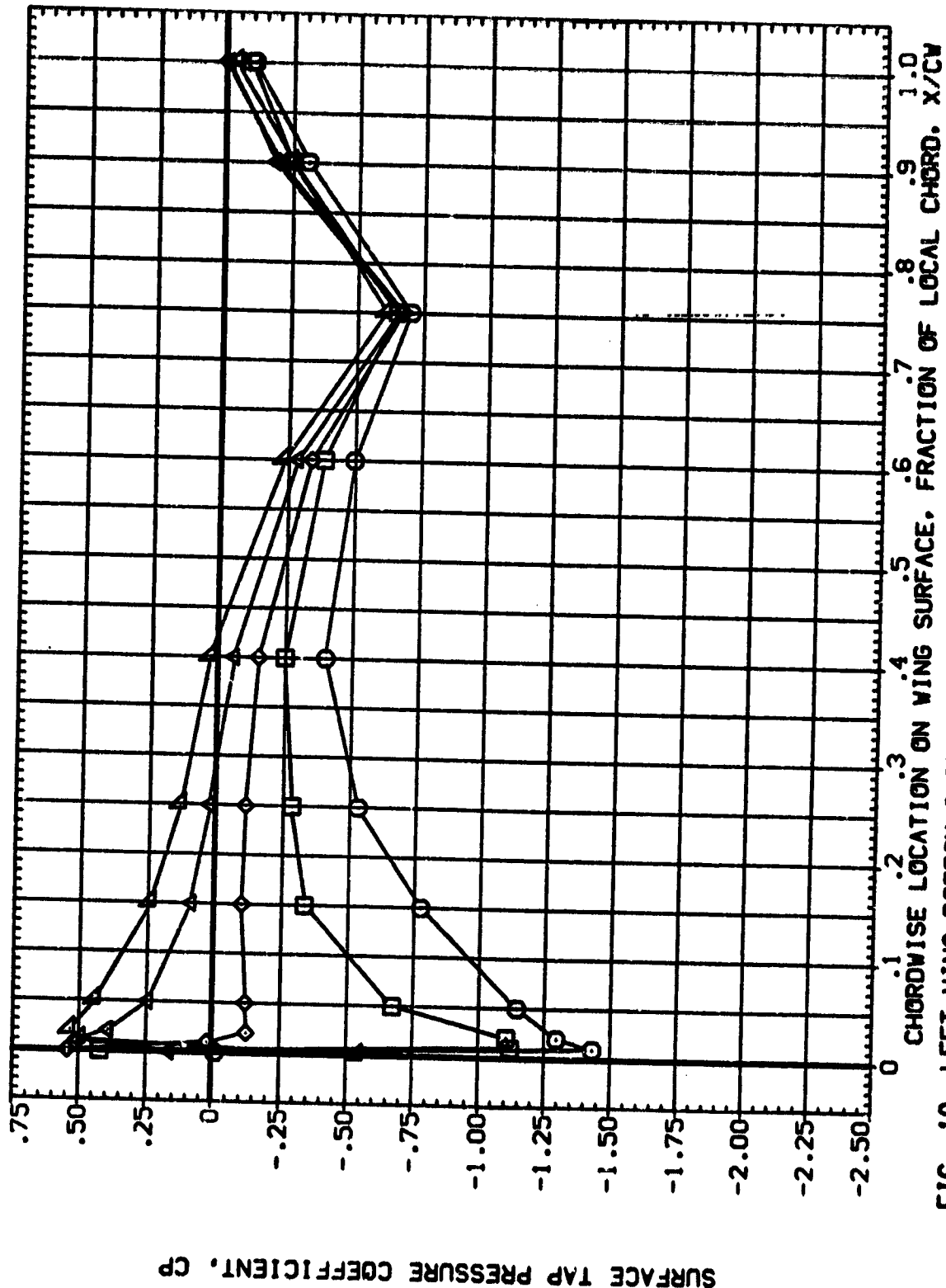


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V
 .972

BETA
 -8.000

RUDDER
 80FAP
 R-ELVN

PARAMETRIC VALUES
 -5.000
 16.300
 -10.000

50.000
 -10.000
 .800

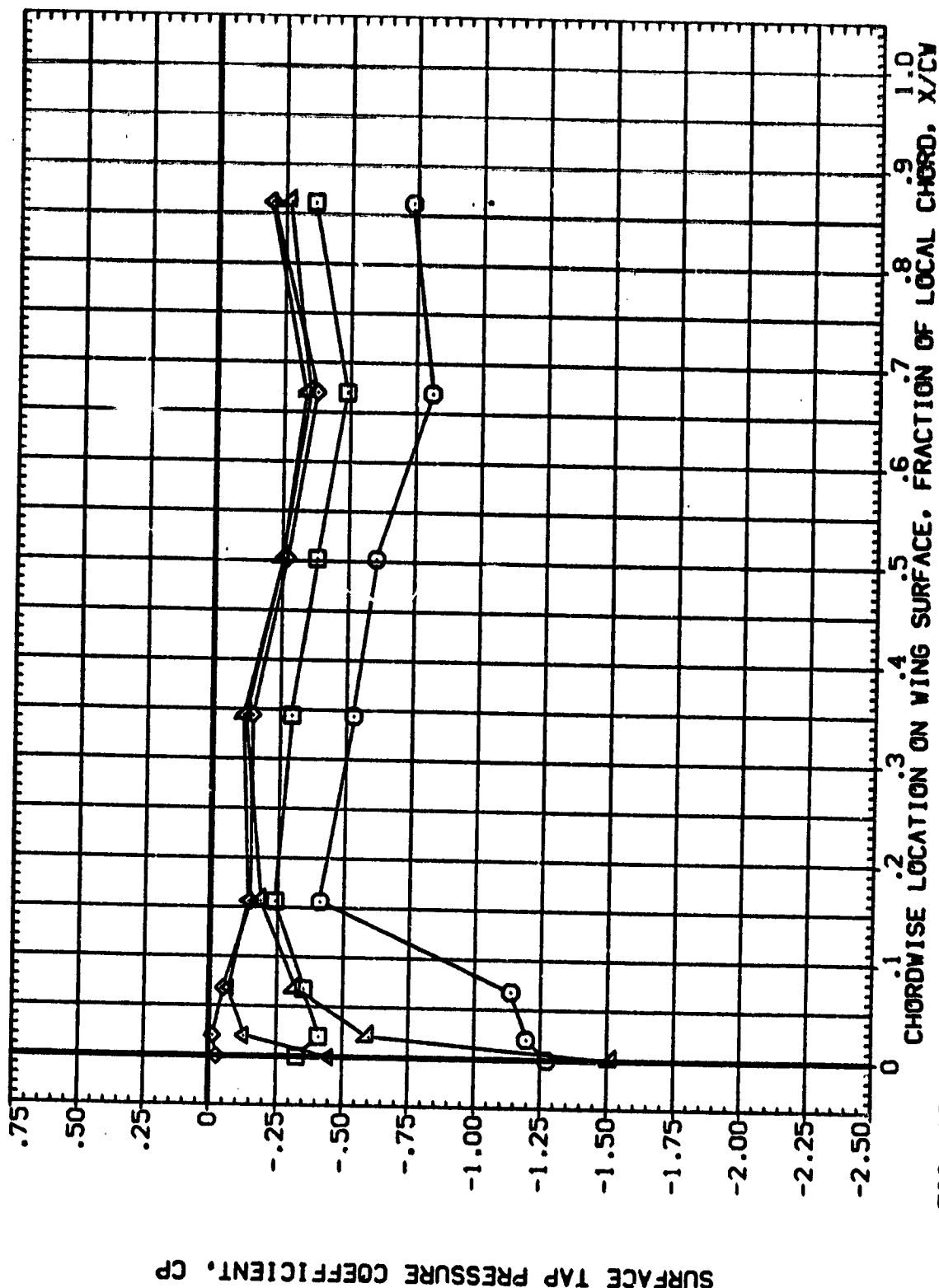


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A146) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 7
 4
 4
 4
 4

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPDRK
 L-ELVN
 MACH
 55.000
 -10.000
 .600

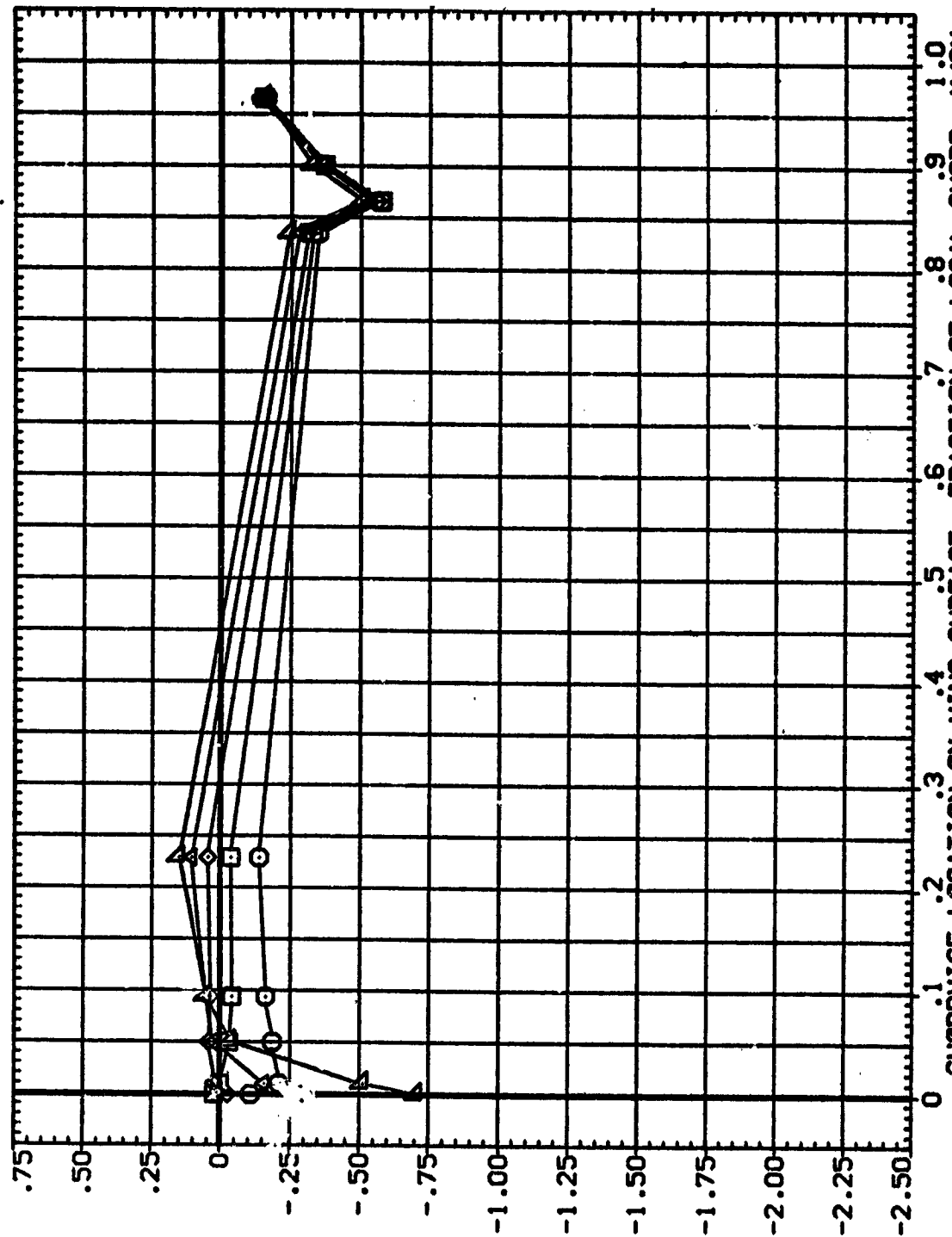


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .427

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPEEDK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

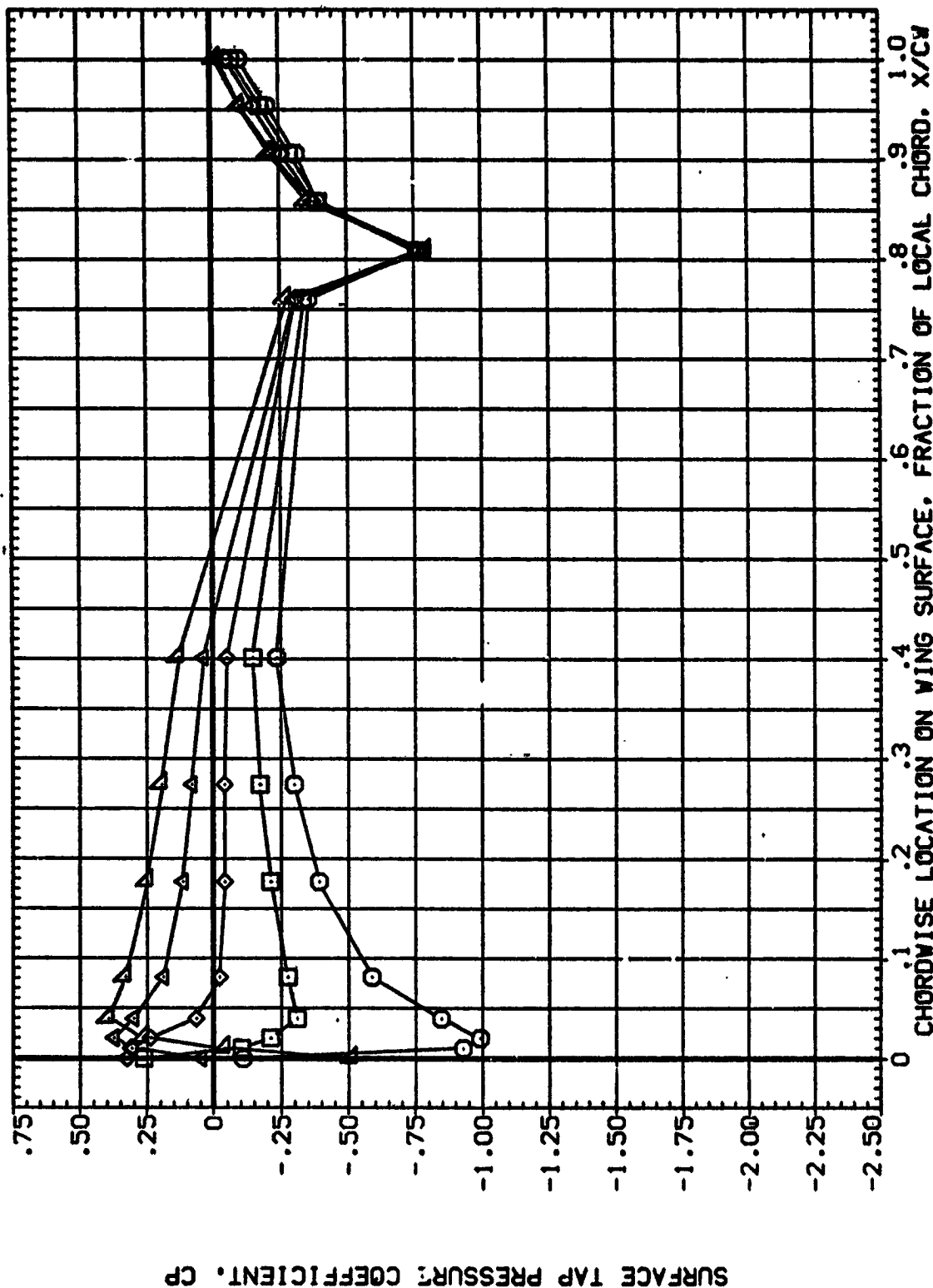


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L75)

SYMBOL

ALPHA
-4.000
.000
4.000
8.000
12.000

2Y/BV .673
BETA -4.000

PARAMETRIC VALUES
RUDDER -5.000 SPDRBK 55.000
80FLAP 16.300 L-ELVN -10.000
R-ELVN -10.000 NACH .600

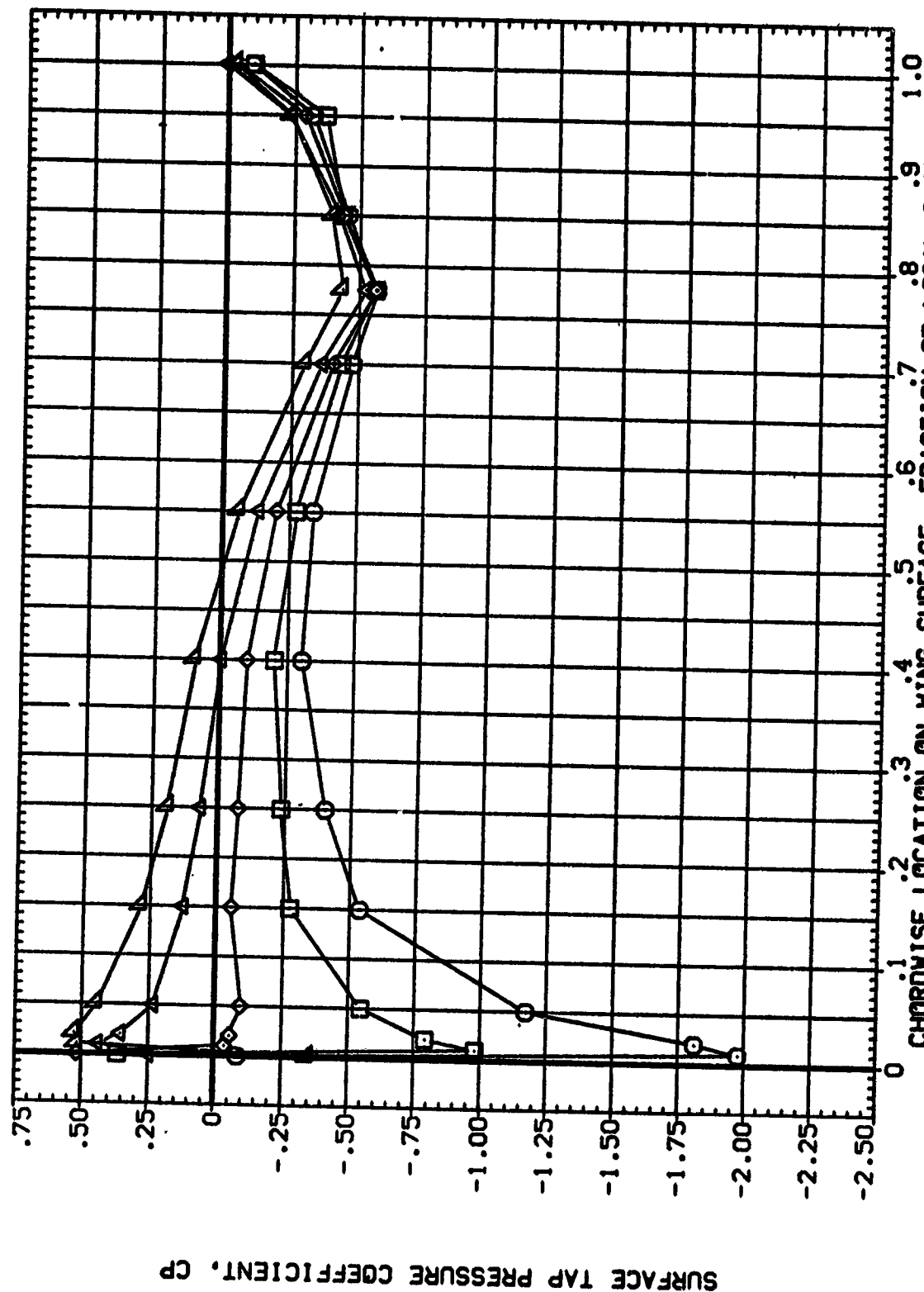


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z1/BV .887
 BETA -4.000

PARAMETRIC VALUES
 RUDDER -5.000 SP0BRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

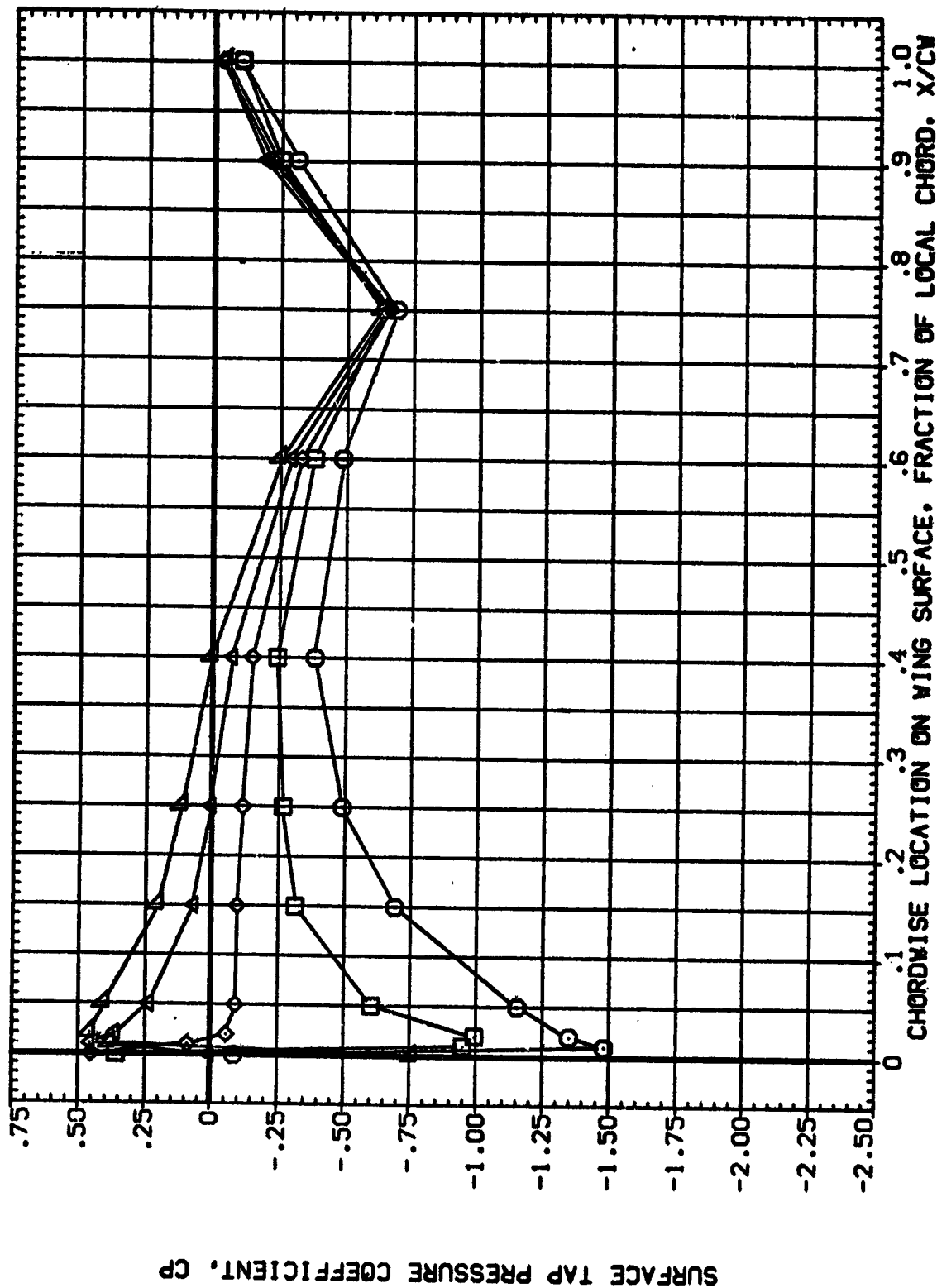


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .972

BETA -4.000

PARAMETRIC VALUES

RUDDER	SPDBRK	L-ELVN	MACH
-5.000	55.000	-10.000	.600
16.300	-10.000		
R-ELVN			

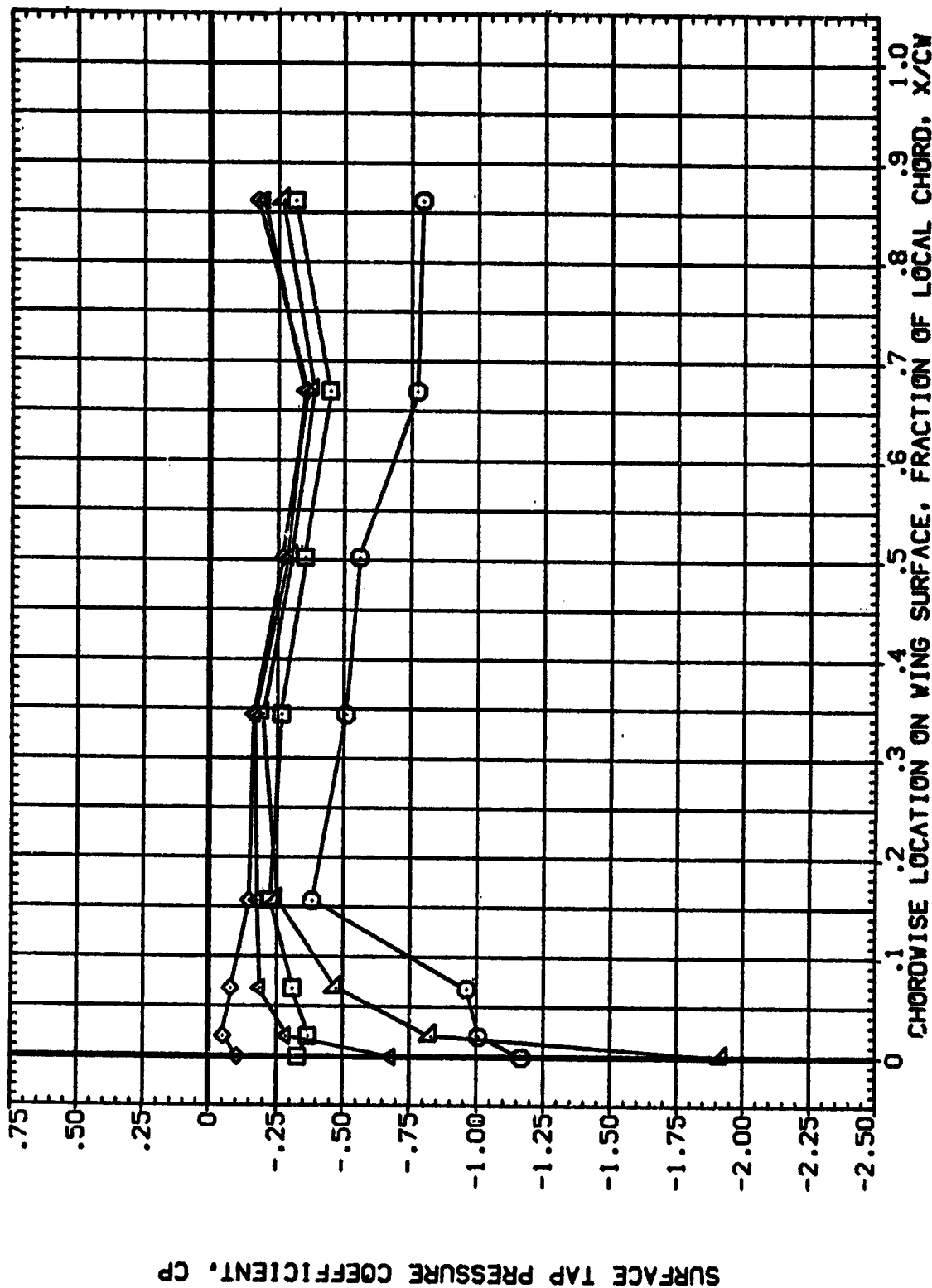


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

BETA
 .000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 35.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

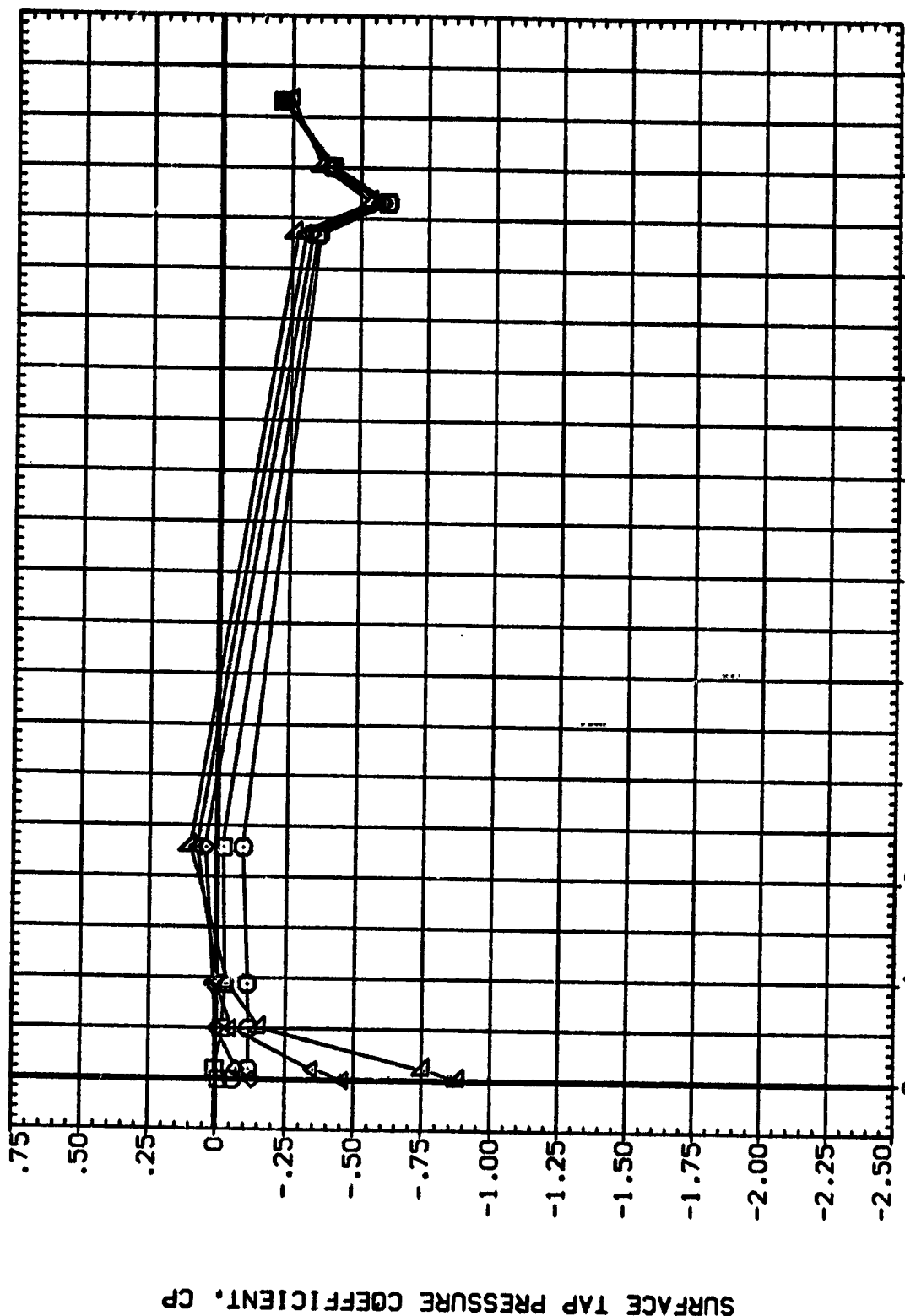


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/8V .427

BETA .000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

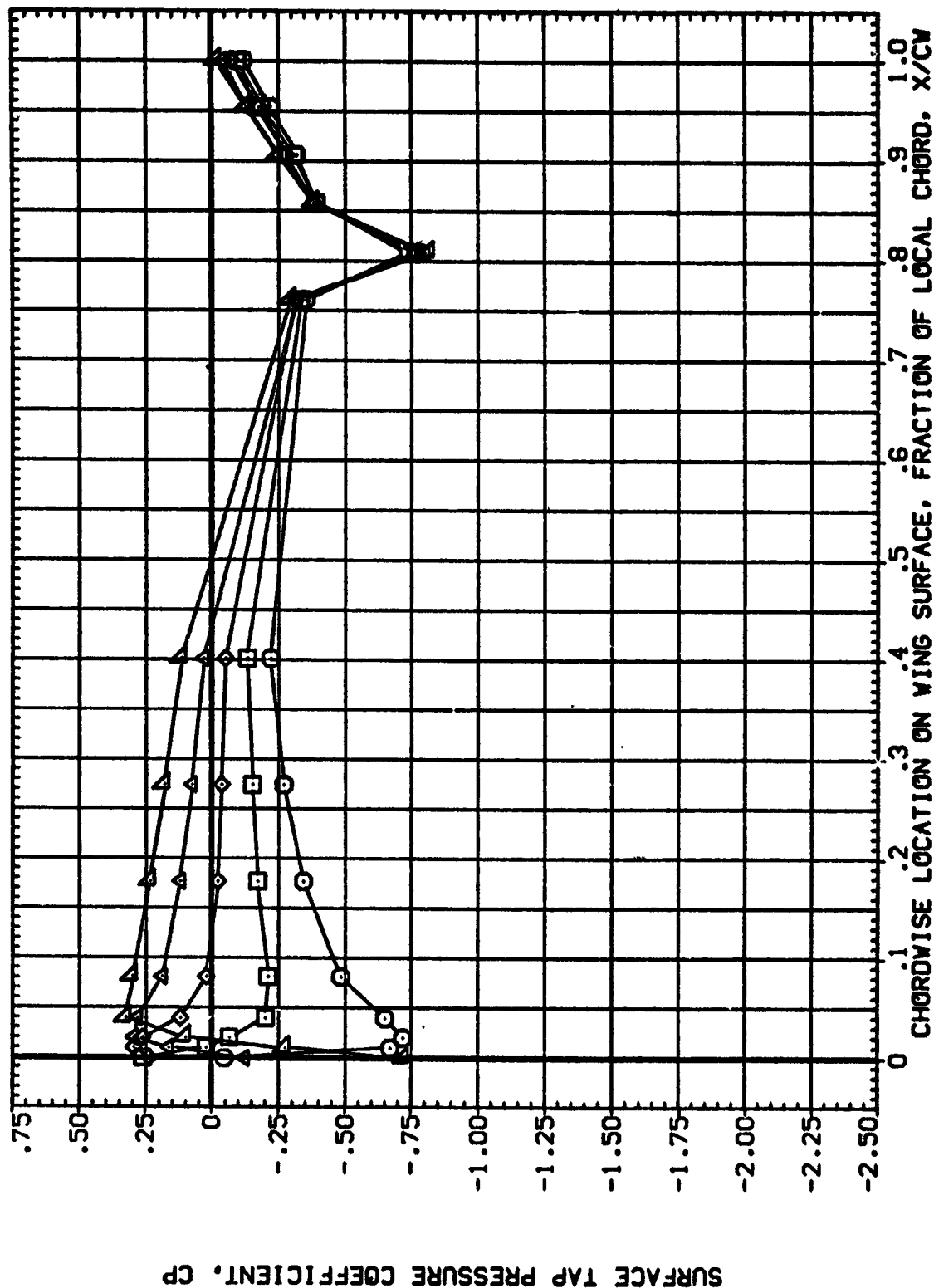


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

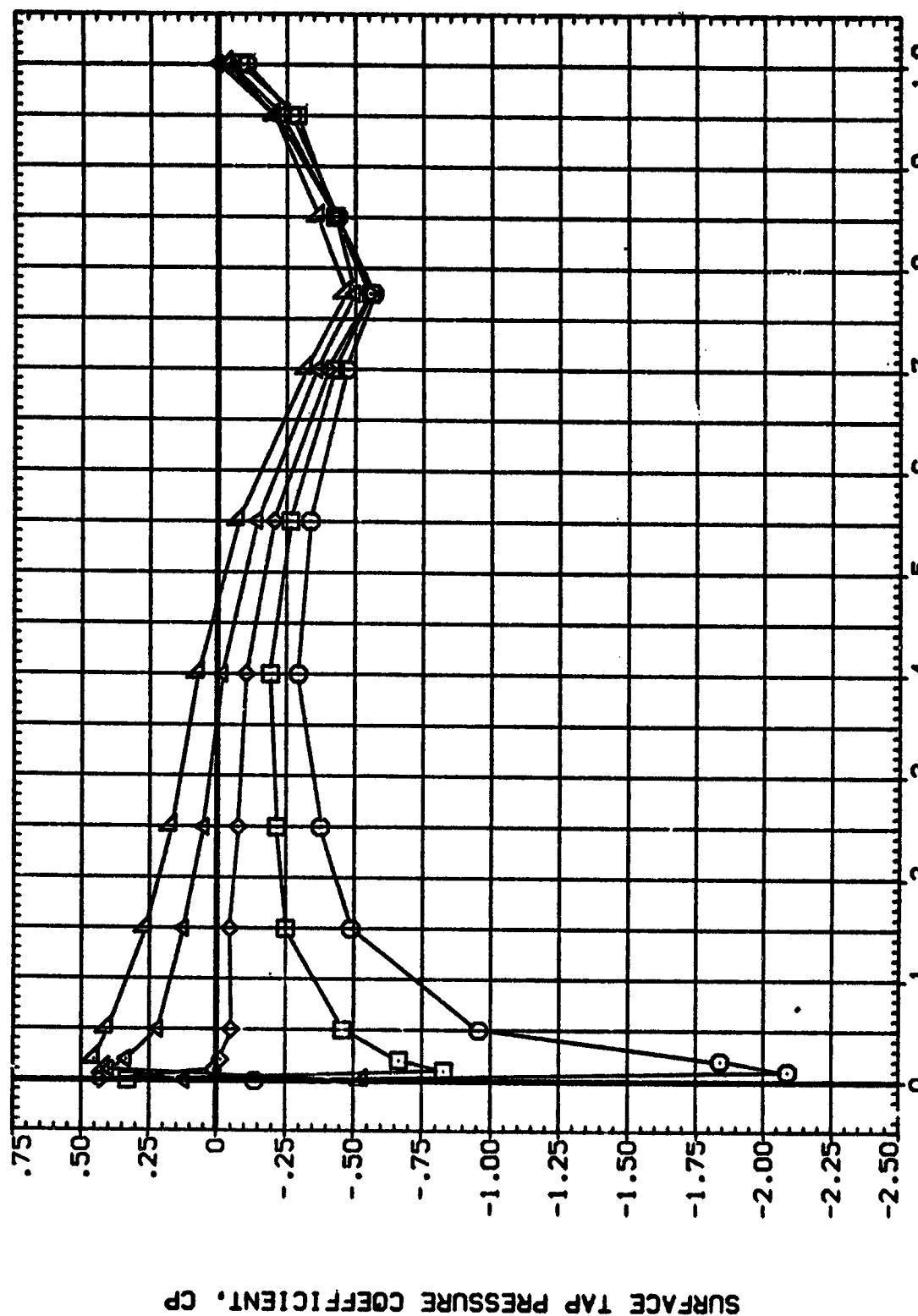
2V/8V
 .673

BETA
 .000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRK
 16.300 L-ELVN
 -10.000 MACH

55.000
 -10.000
 .500



CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A14) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL	ALPHA	2Y/8V	BETA	RUDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRK	L-ELVN	MACH
▽	-4.000	.987	.000				-5.000			
◇	.000						16.300			
□	4.000						-10.000			
△	8.000									
▽	12.000									

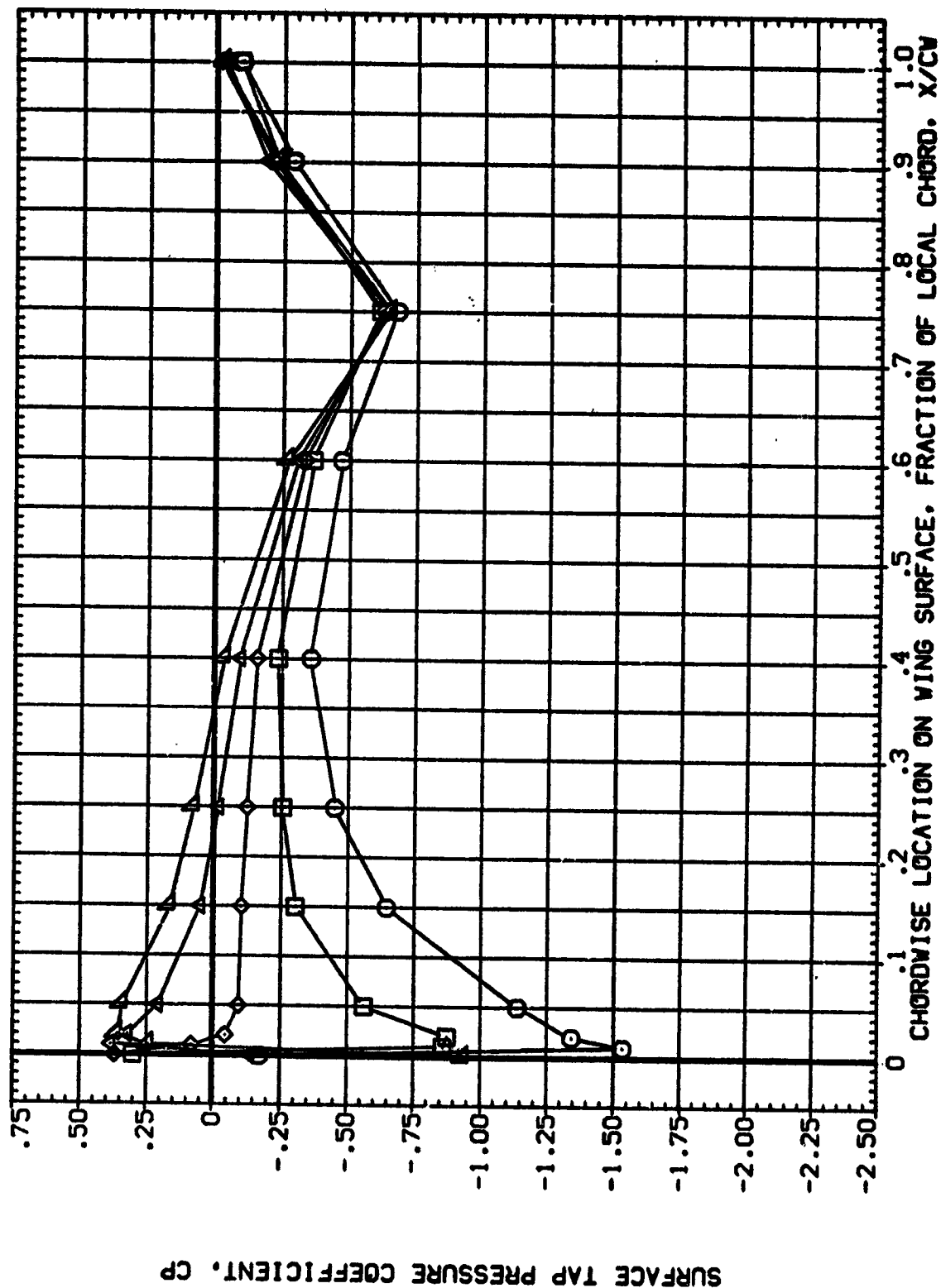


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V
 .972

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

SPDRK
 -3.000

L-ELVN
 -10.000

MACH
 .600

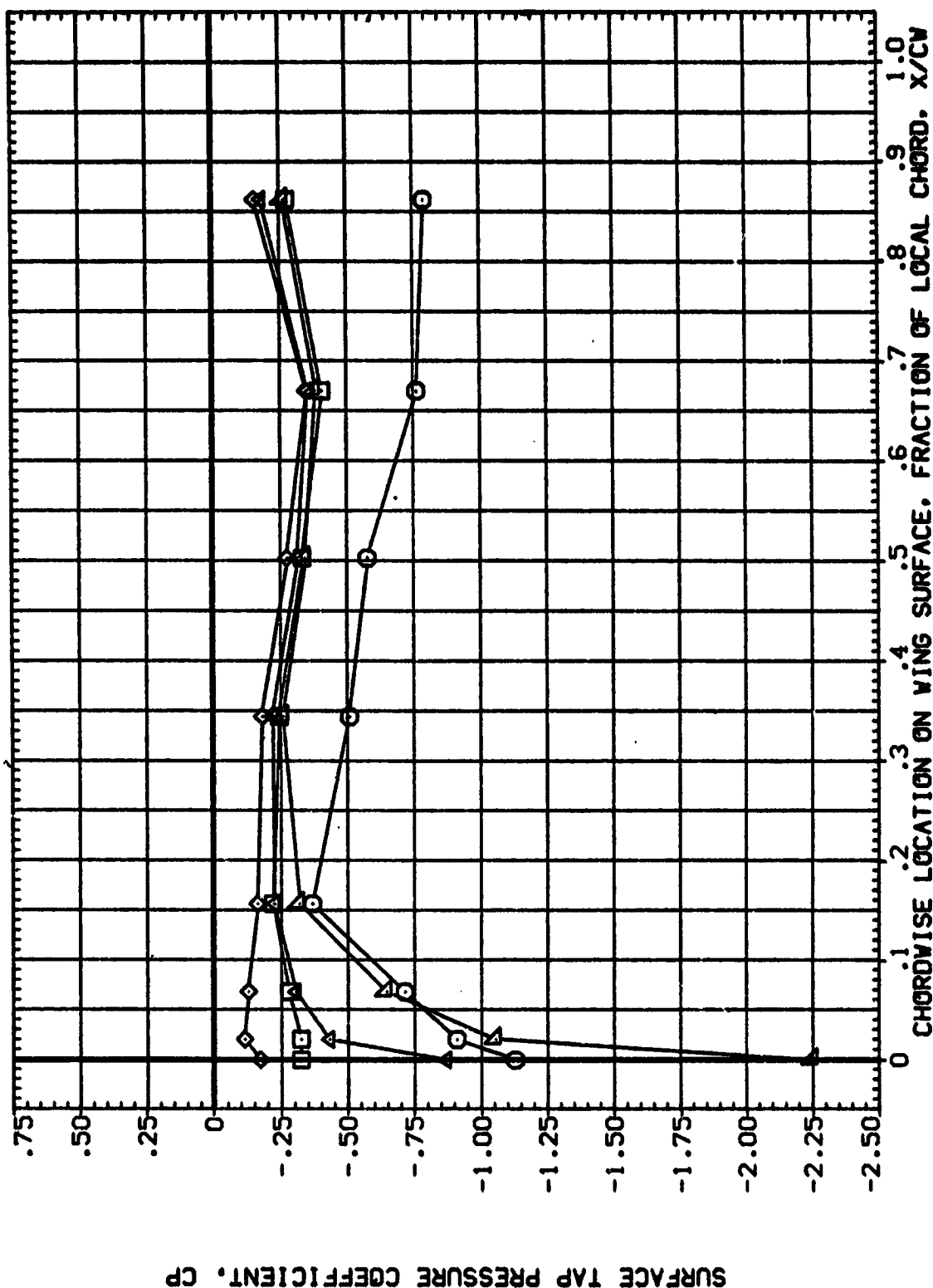


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L75)

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 B0FLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

ALPHA 21/BV BET1
 -4.000 .289 4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ▽

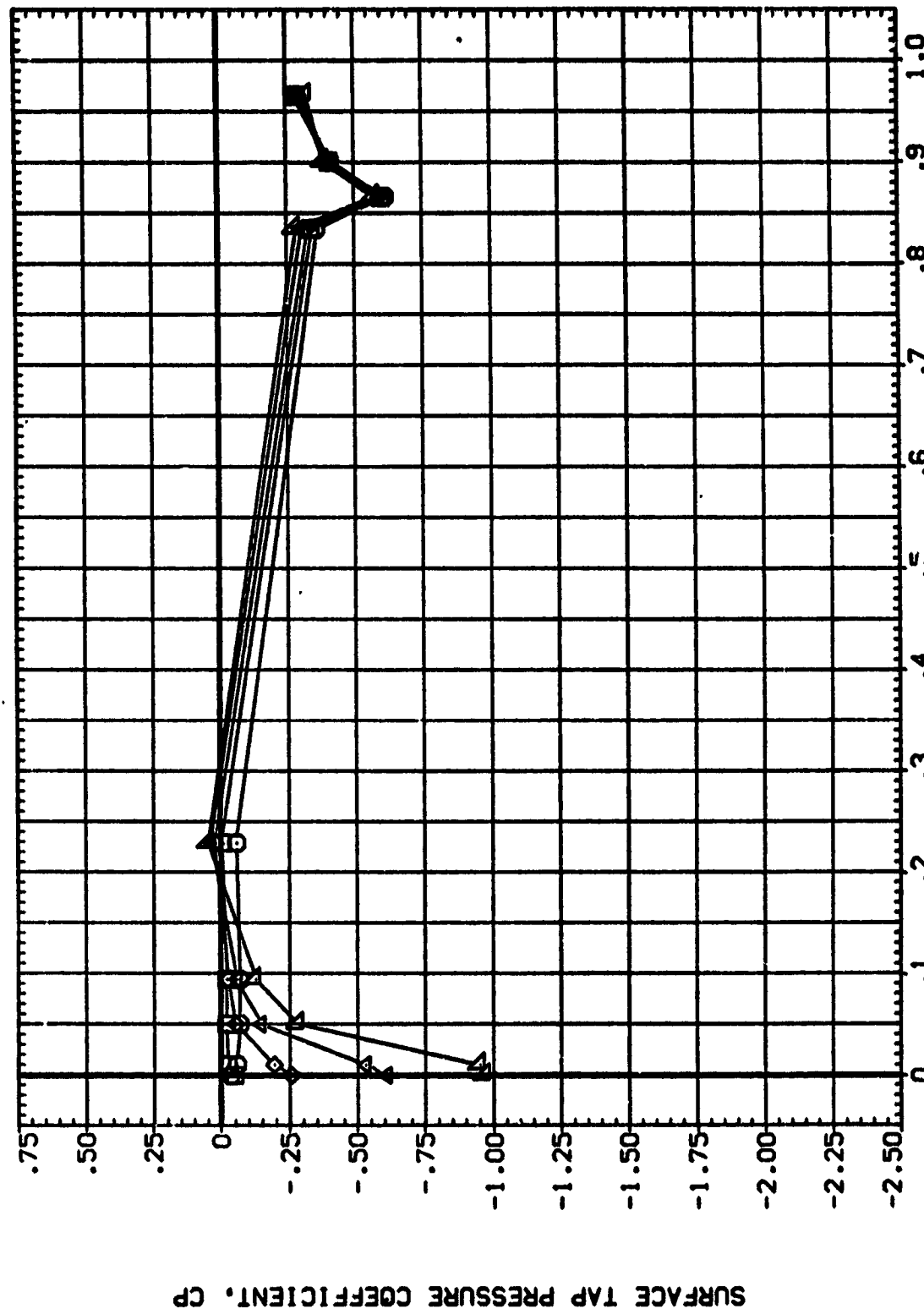


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL ALPHA 2V/BN BETA
 ▽ -4.000 .427 4.000
 ◇ .000
 ◻ 4.000
 ◯ 8.000
 △ 12.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

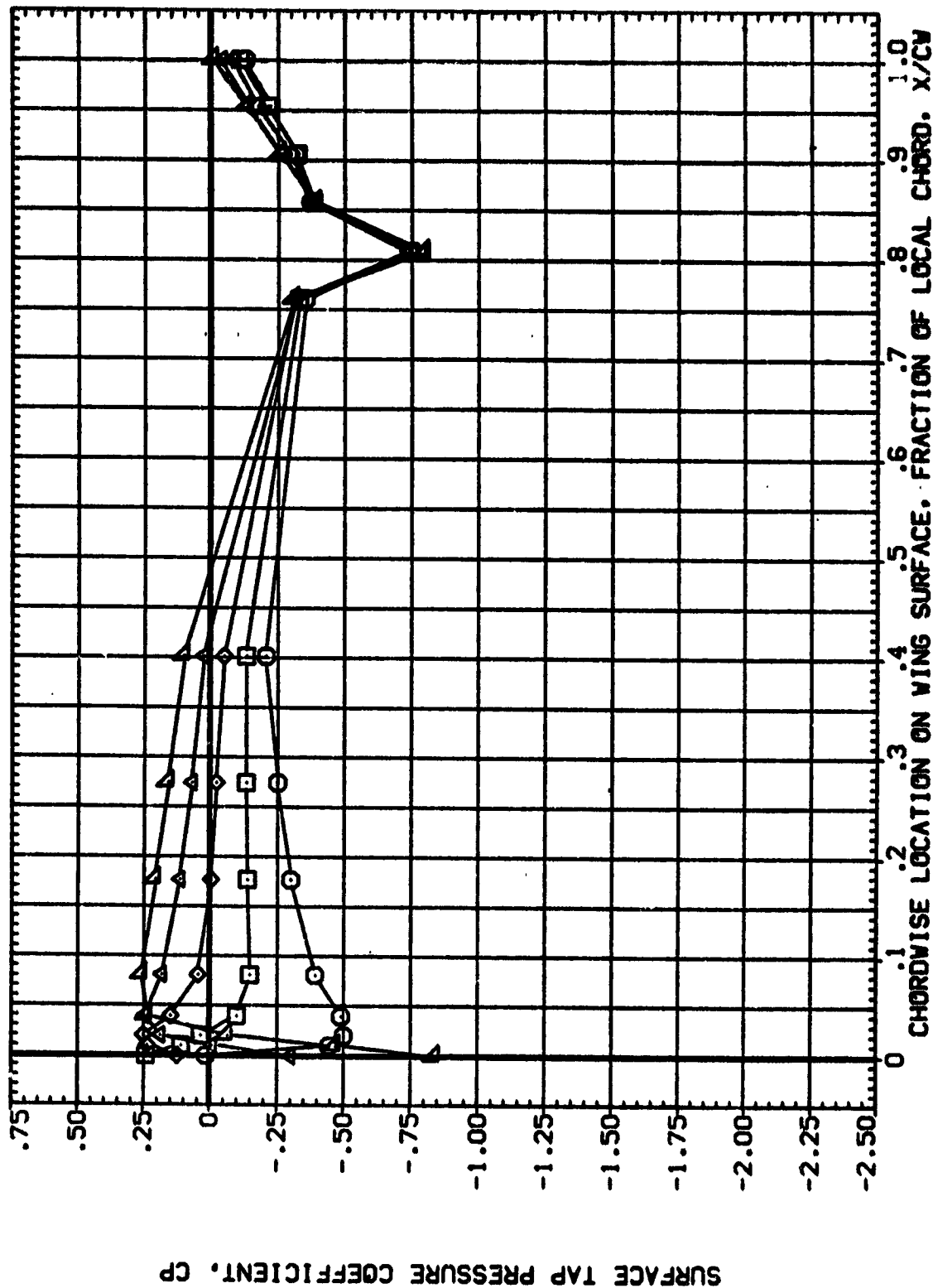


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L75)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .673
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000
 SPOILER 16.300
 L-ELVN -10.000
 R-ELVN -10.000
 MACH .800

55.000
 -10.000
 .800

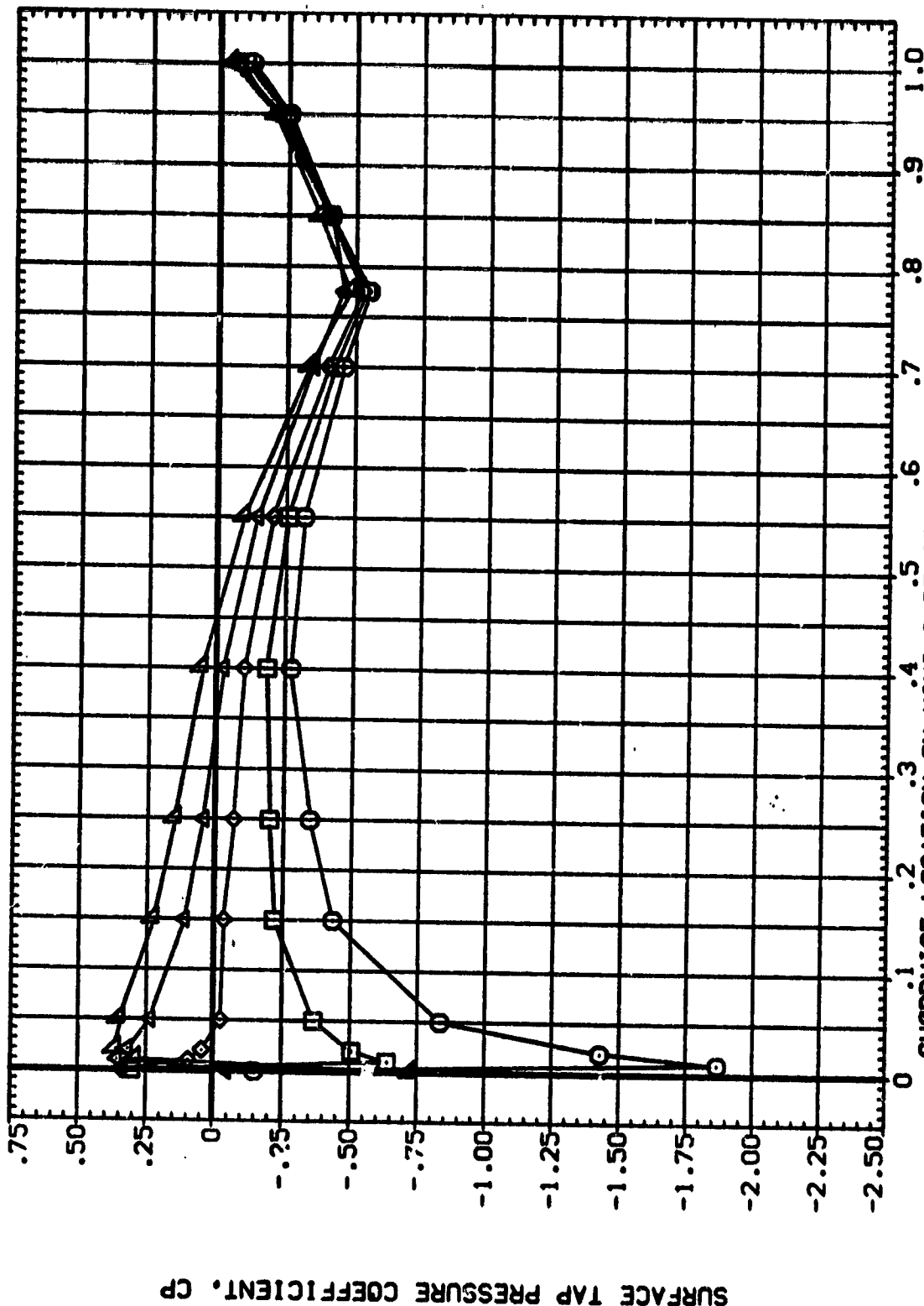


FIG. 10 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

PARAMETRIC VALUES
 RUDDER -5.000 SPDBRK -5.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .500

ALPHA 21/8V BETA
 -4.000 .887 4.000

SYMBOL
 ○ □ ◇ △ ▽

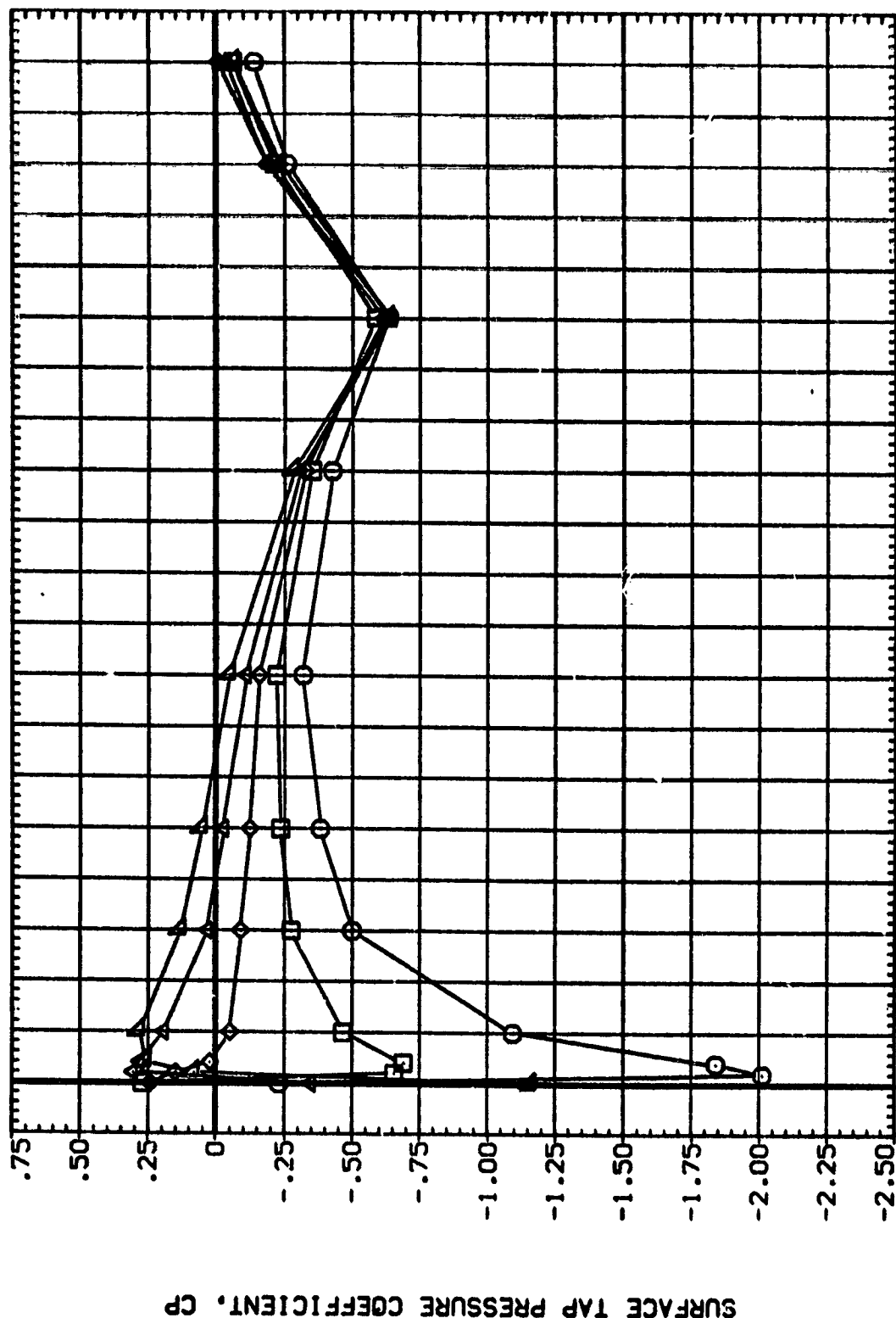


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	BOFLAP	R-ELV	PARAMETRIC VALUES	SS.000	-10.000	.600
○	-4.000	.972	4.000				-5.000	SP08RK		
□	.000						16.300	L-ELVN		
△	4.000						-10.000	MACH		
▽	8.000									
▽	12.000									

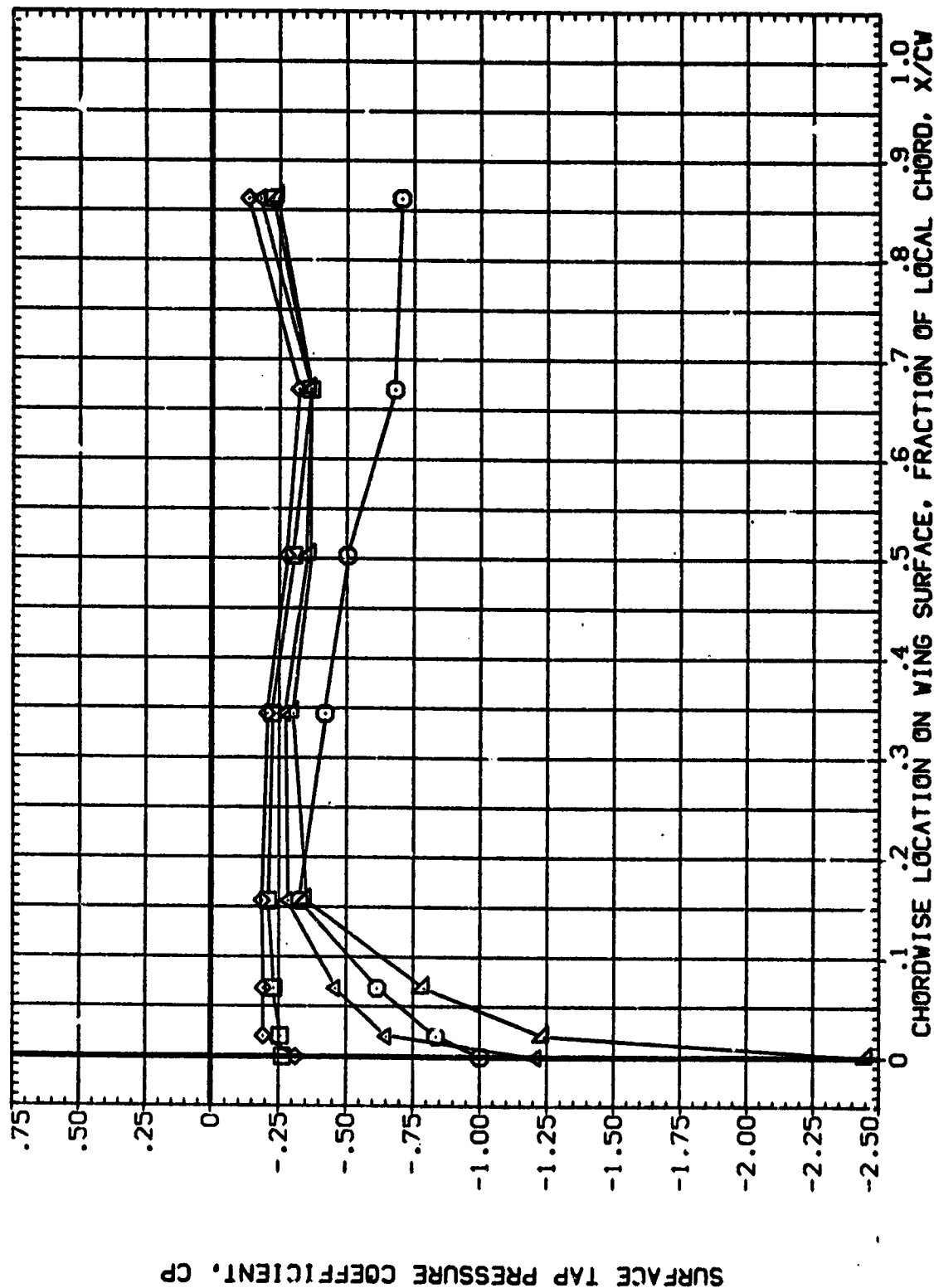


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL

ALPHA
-4.000
.800
4.000
8.000
12.000

2V/8V BETA
.289 8.000

PARAMETRIC VALUES
RUDDER -5.000 SPDRK 55.000
BOFLAP 16.300 L-ELVN -10.000
R-ELVN -10.000 MACH .600

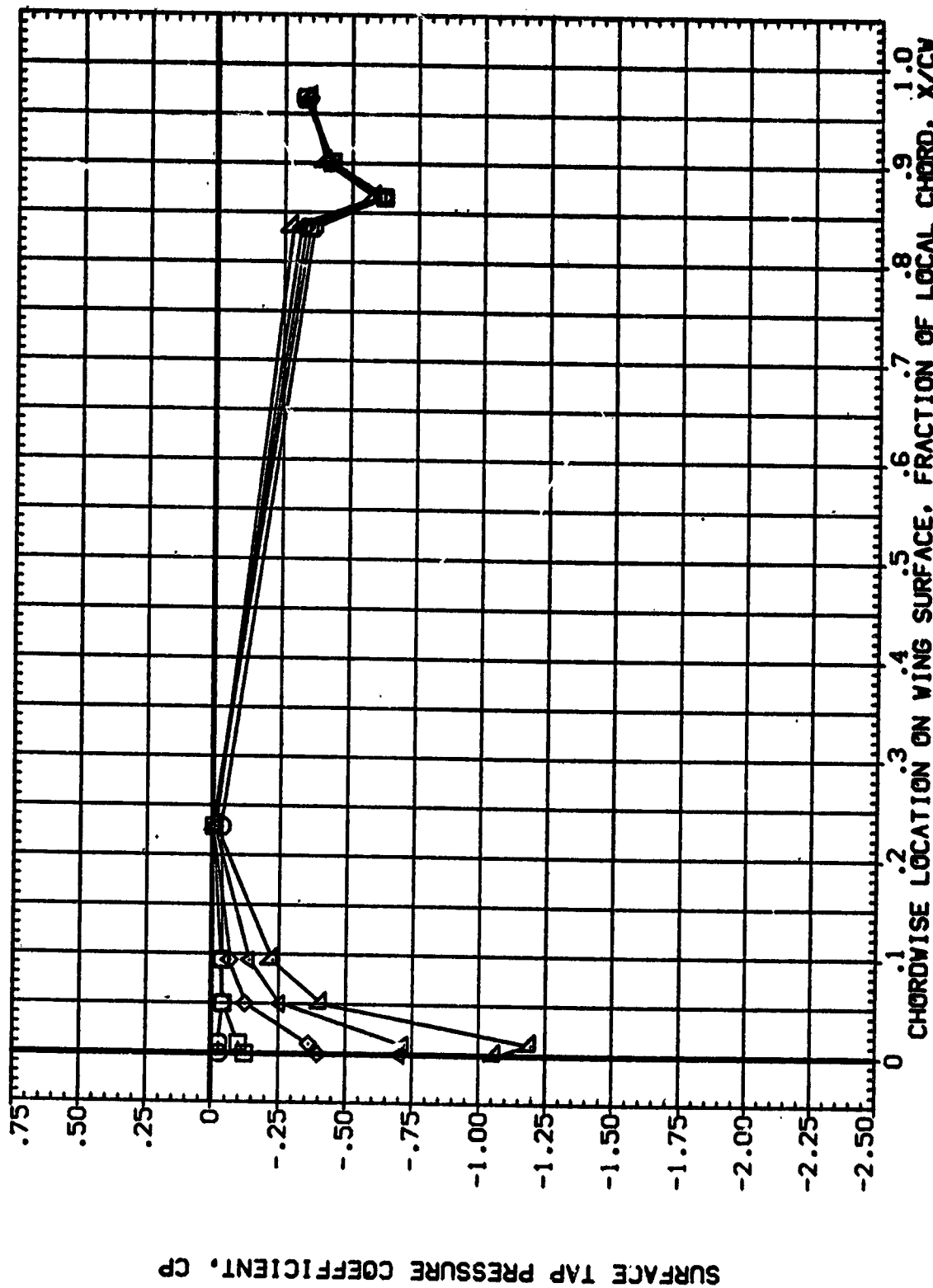


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
▽
◇
□
△

ALPHA
-4.000
.000
4.000
8.000
12.000

2Y/BV
.427

BETA
8.000

PARAMETRIC VALUES
RUDDER
BOFLAP
R-ELVN

-5.000
16.300
-10.000

SPDRK
L-ELVN
MACH

55.000
-10.000
.600

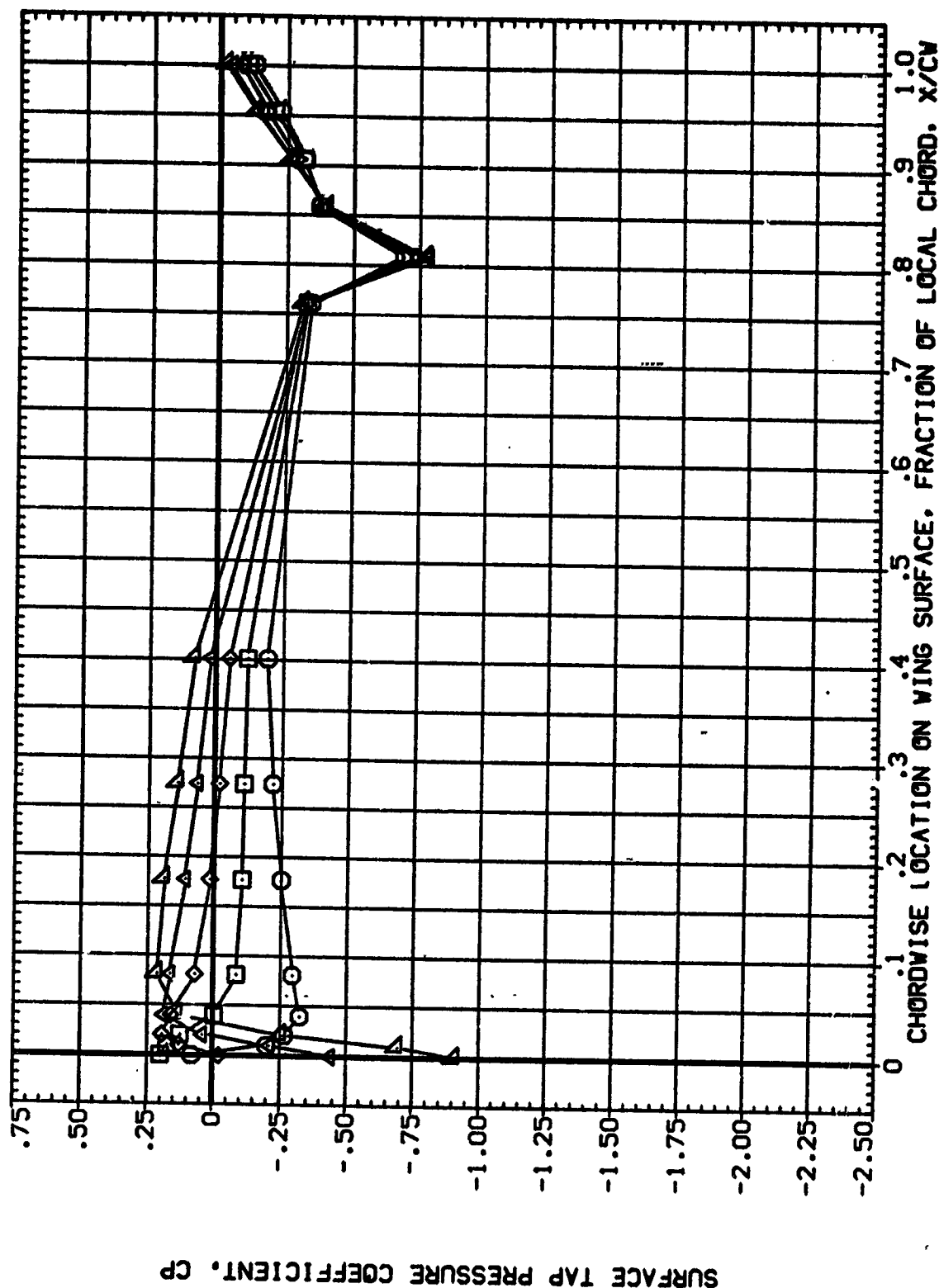


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▴
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V
 .673

BETA
 8.000

RUDDER
 BDFLAP
 R-ELVN.

PARAMETRIC VALUES
 -5.000 SPDRBK
 16.300 L-ELVN
 -10.000 MACH
 .600

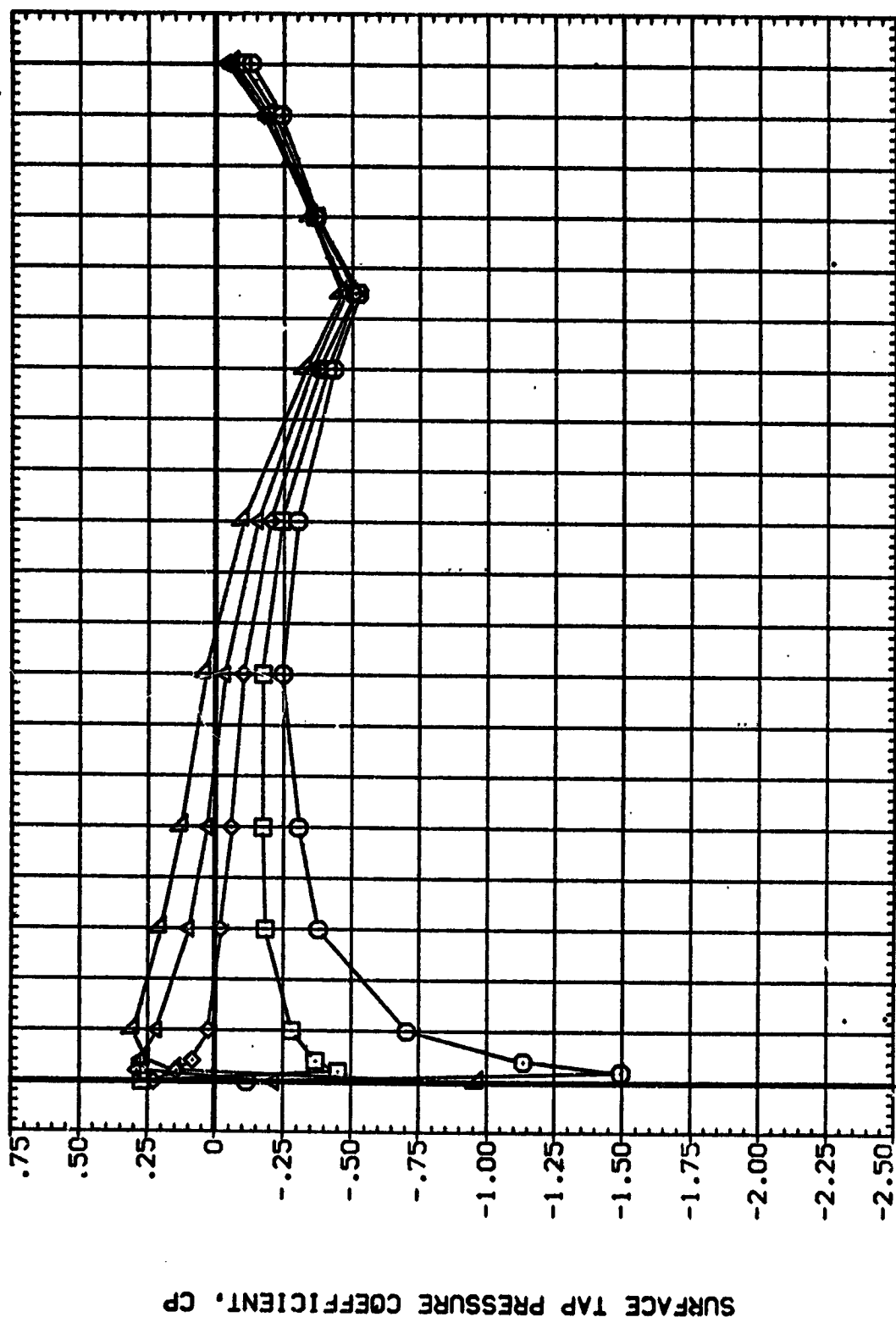


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

33,300
-10,000
.600



AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L75)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V BETA
 .572 8.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

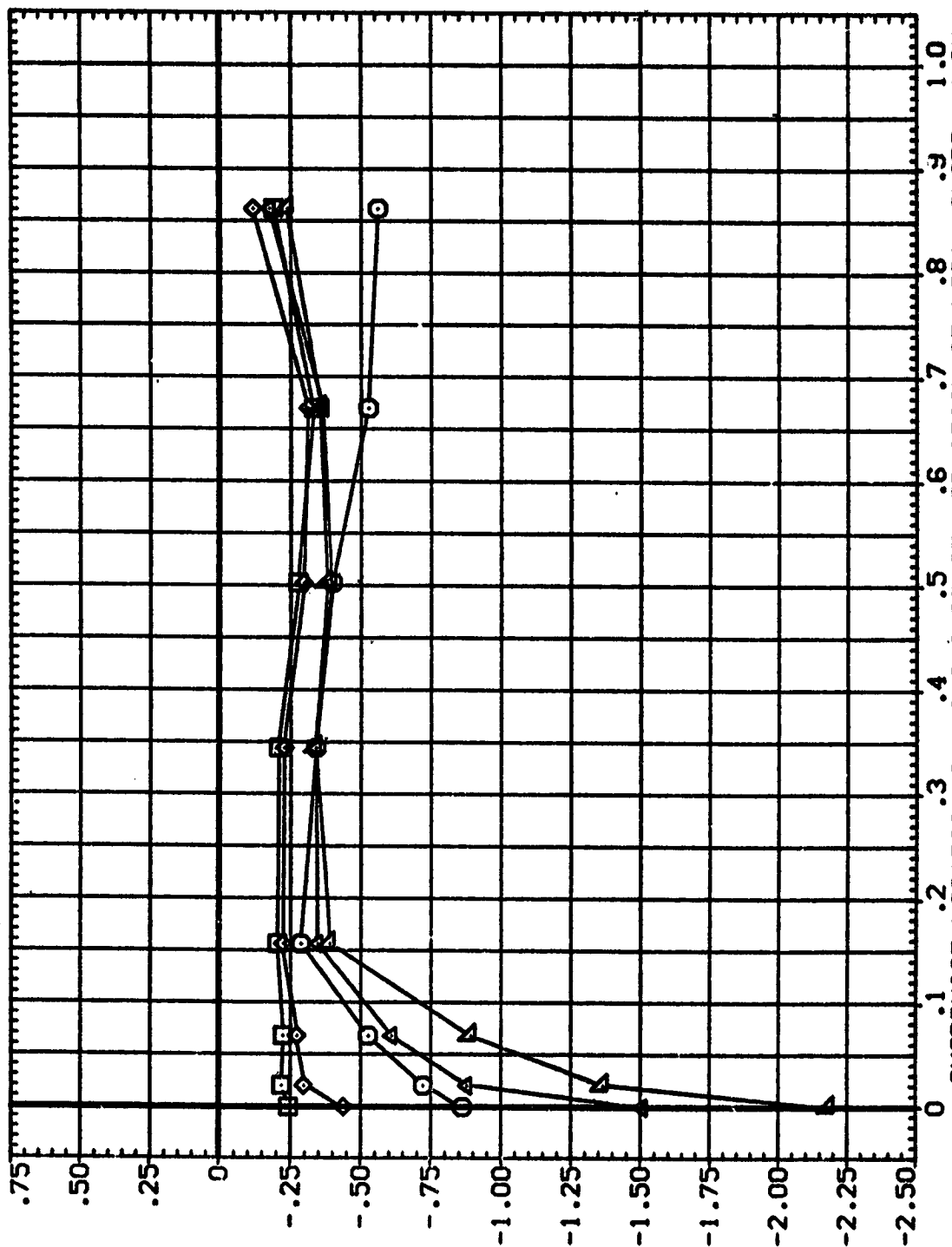


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L74)

SYMBOL
 ▽
 ◇
 □
 ○

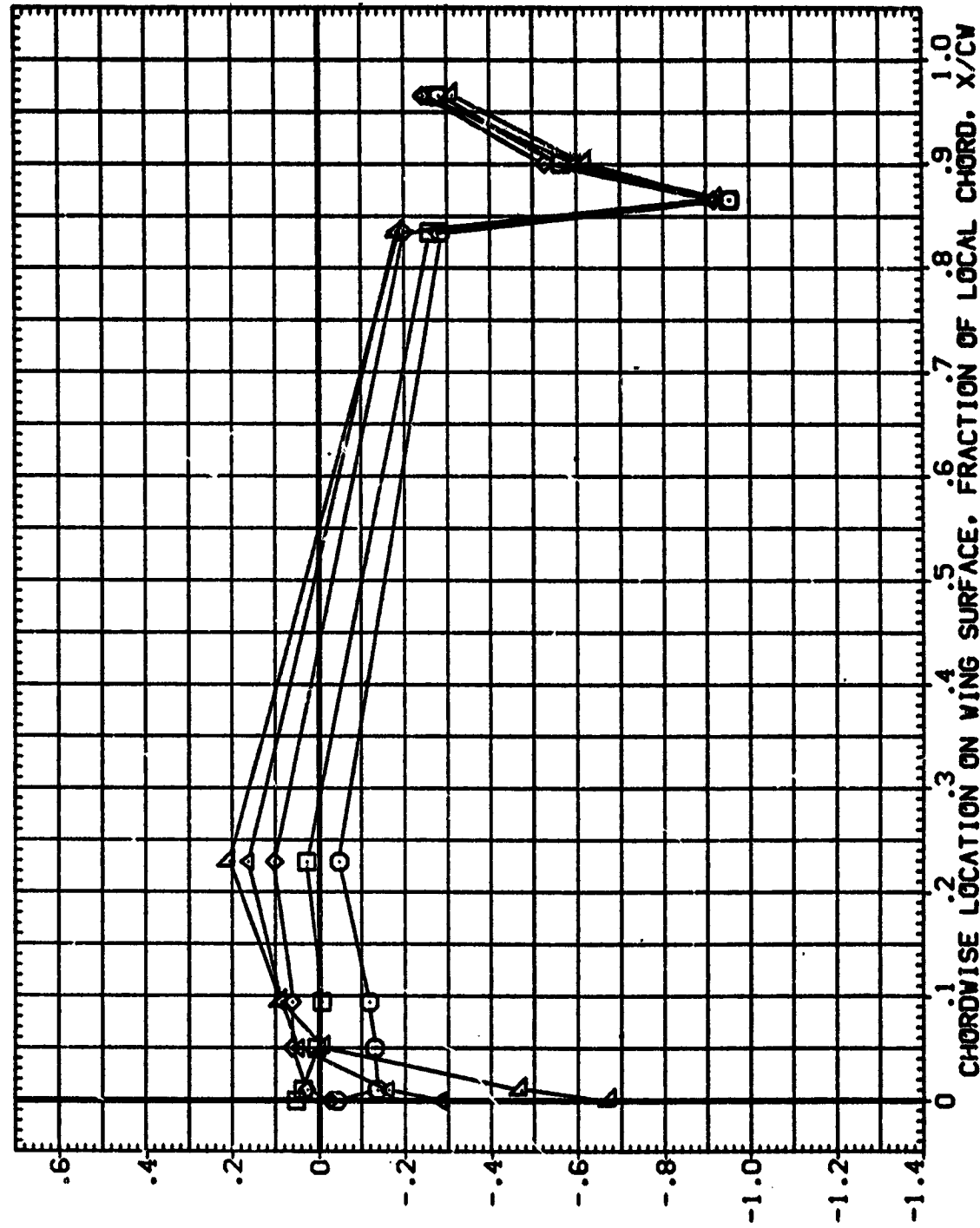
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .299

BETA
 -4.000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000
 16.300
 -10.000
 SPDRX
 L-ELVN
 MACH
 55.000
 -10.000
 .900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-U/3(UA148) -140A/B/C ORB LEFT WING BOT(IE8L74)

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK -10.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

2°/BN .427 BETA -4.000

SYMBOL
 ▲
 ◆
 □
 ○
 ▽

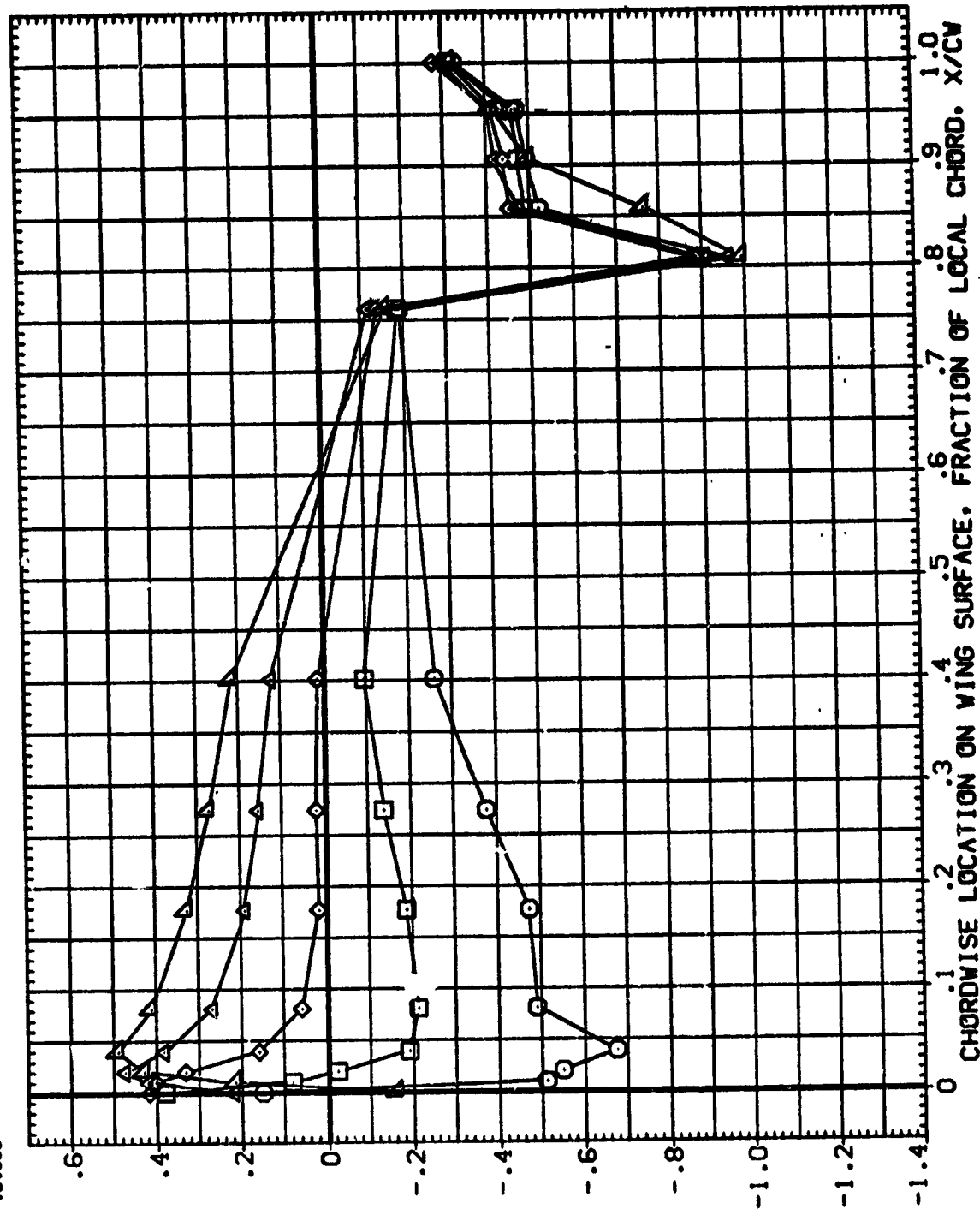


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(CA:-8) -140A/B/C ORB LEFT WING BOT(1E8L74)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BW
 .673

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

55.000
 -10.000
 .900

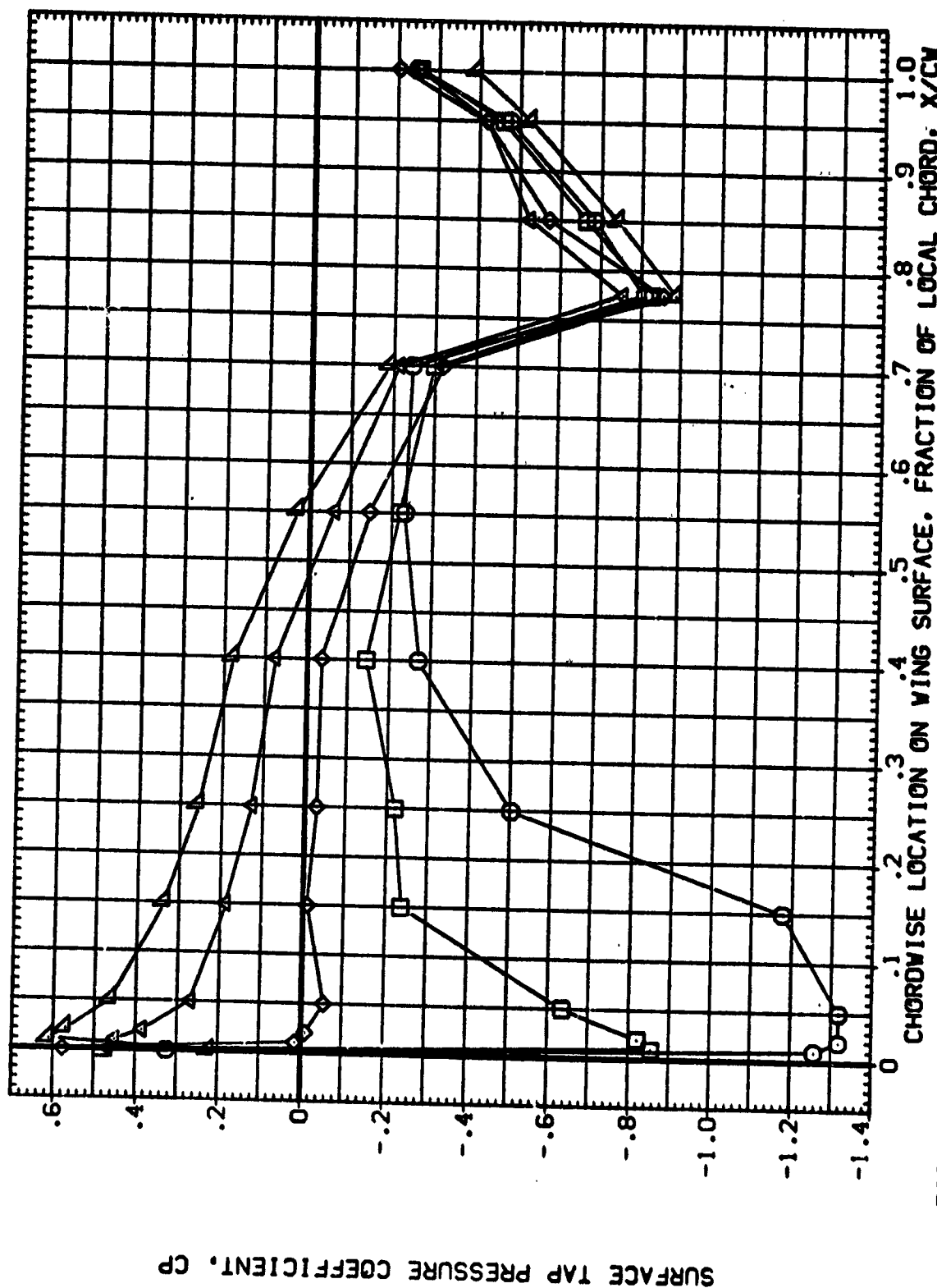


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(OA148) -140A/B/C ORB LEFT WING BOT(IE8L74)

SYMBOL
 ▲
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BV .887

BETA -4.000

PARAMETRIC VALUES

RUDDER -5.000 SPDBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

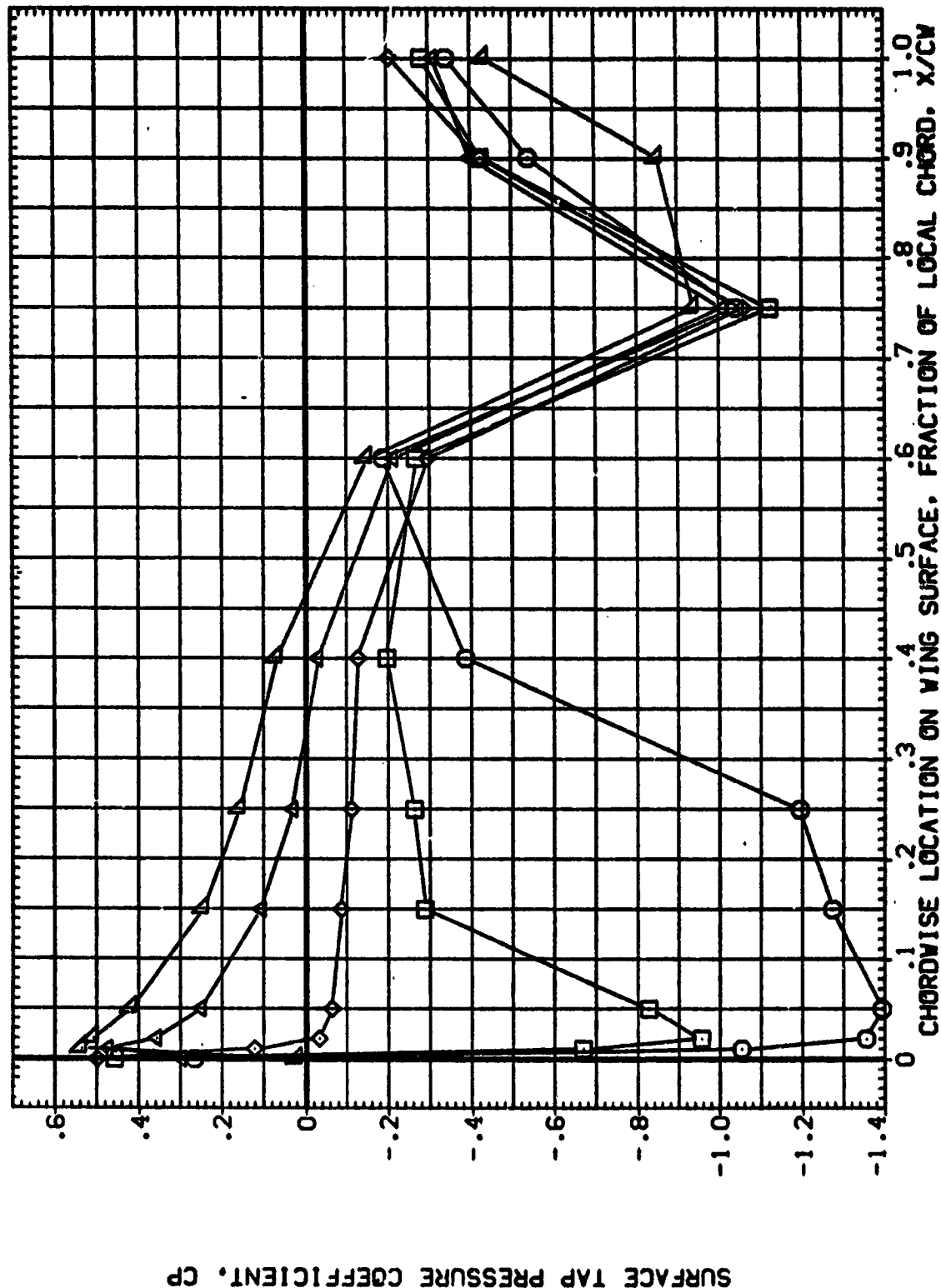


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L74)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BN
 .972

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	BOFLAP	R-ELVN	-5.000	16.300	-10.000	SPDRBK	L-ELVN	MACH	55.000	-10.000	.900

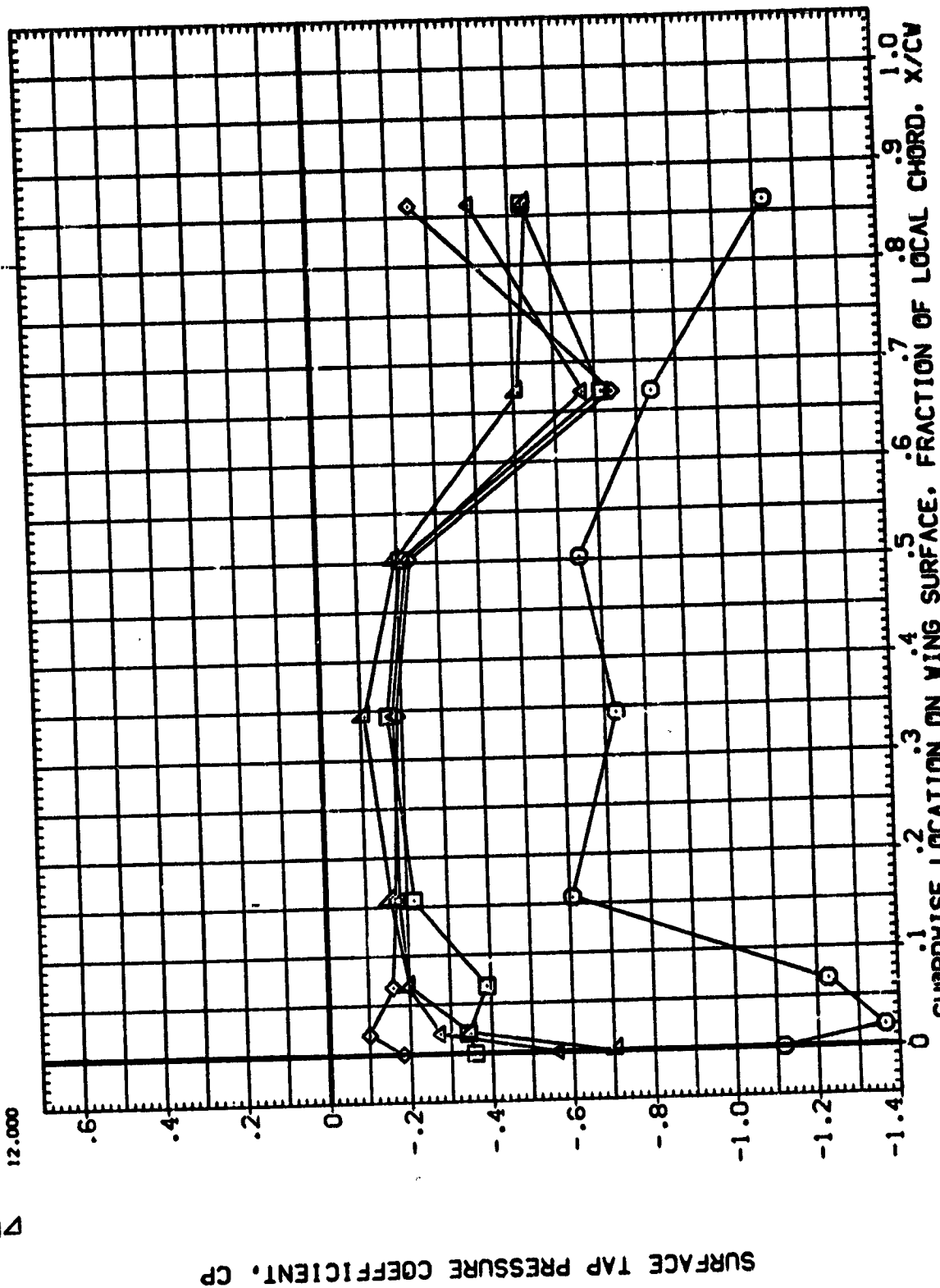
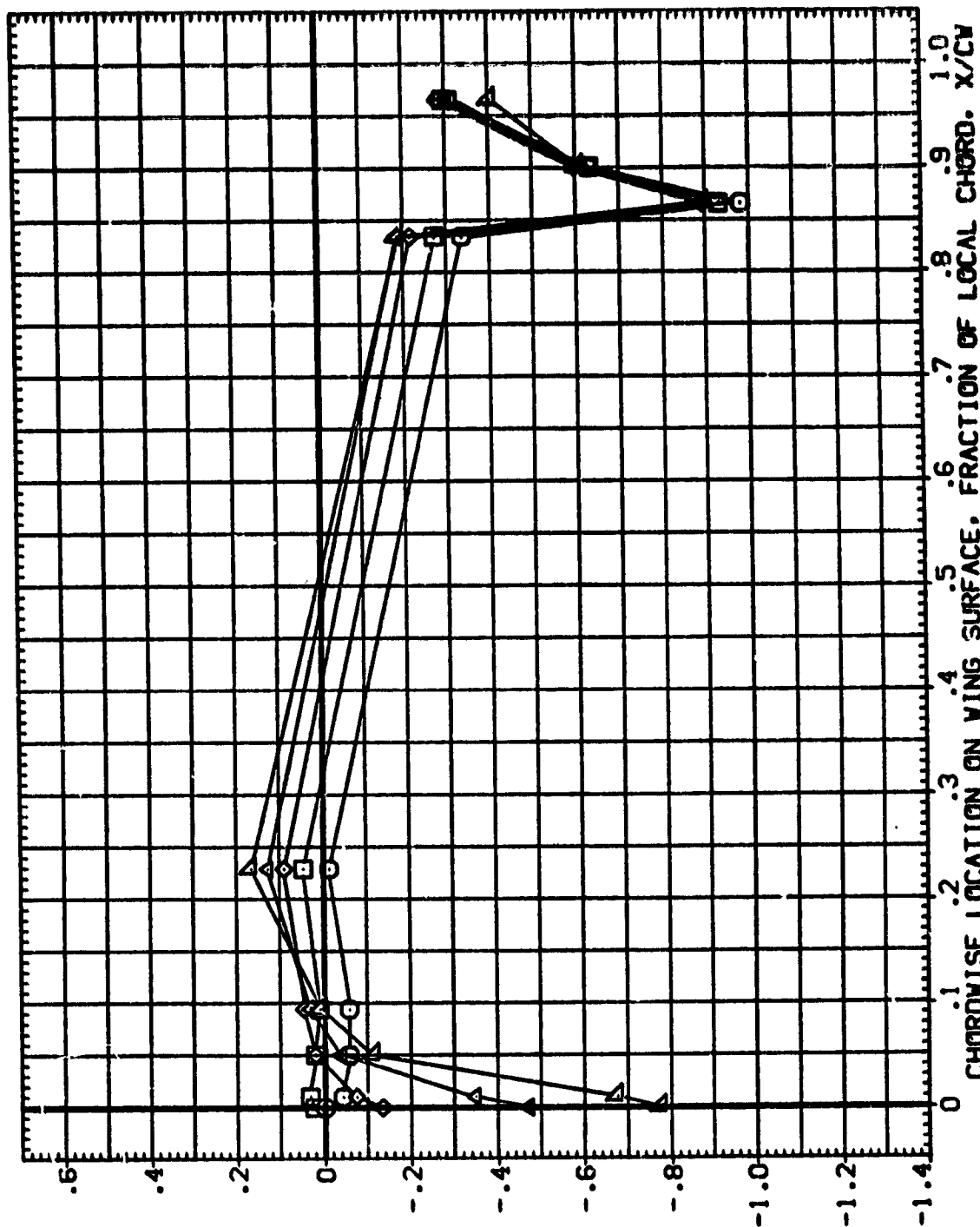


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L74)

SYMBOL	ALPHA	2 π /BW	BETA	PARAMETRIC VALUES
▽	-4.000	.299	.000	RUDDER
◇	.000			80FLAP
□	4.000			16.300
△	8.000			L-ELVN
	12.000			-10.000
				MACH
				-10.000
				.500



AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L74)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V BETA
 .427 .000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

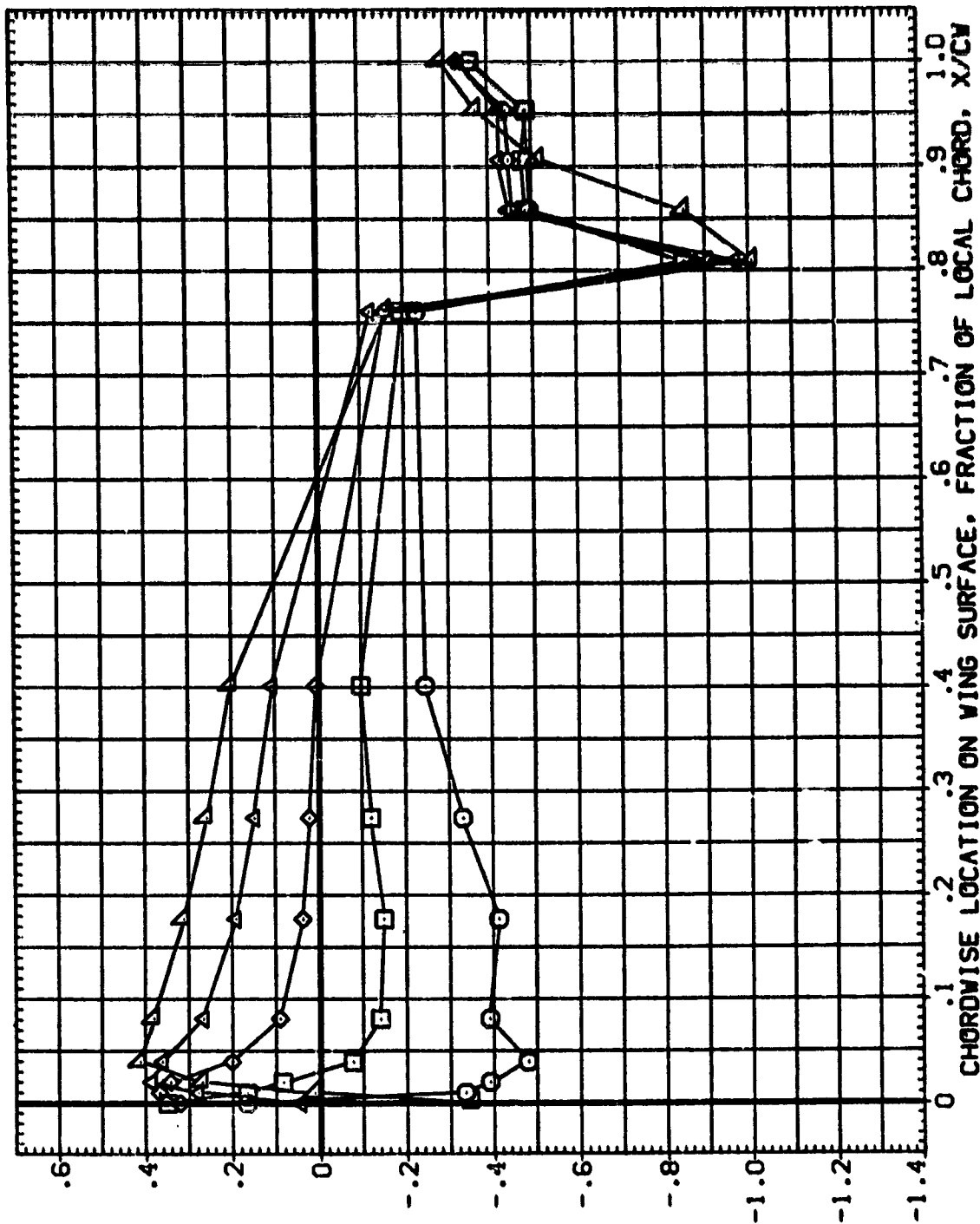


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L74)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2V/8V
 .673

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRBY
 L-ELVN
 MACH

55.000
 -10.000
 .900

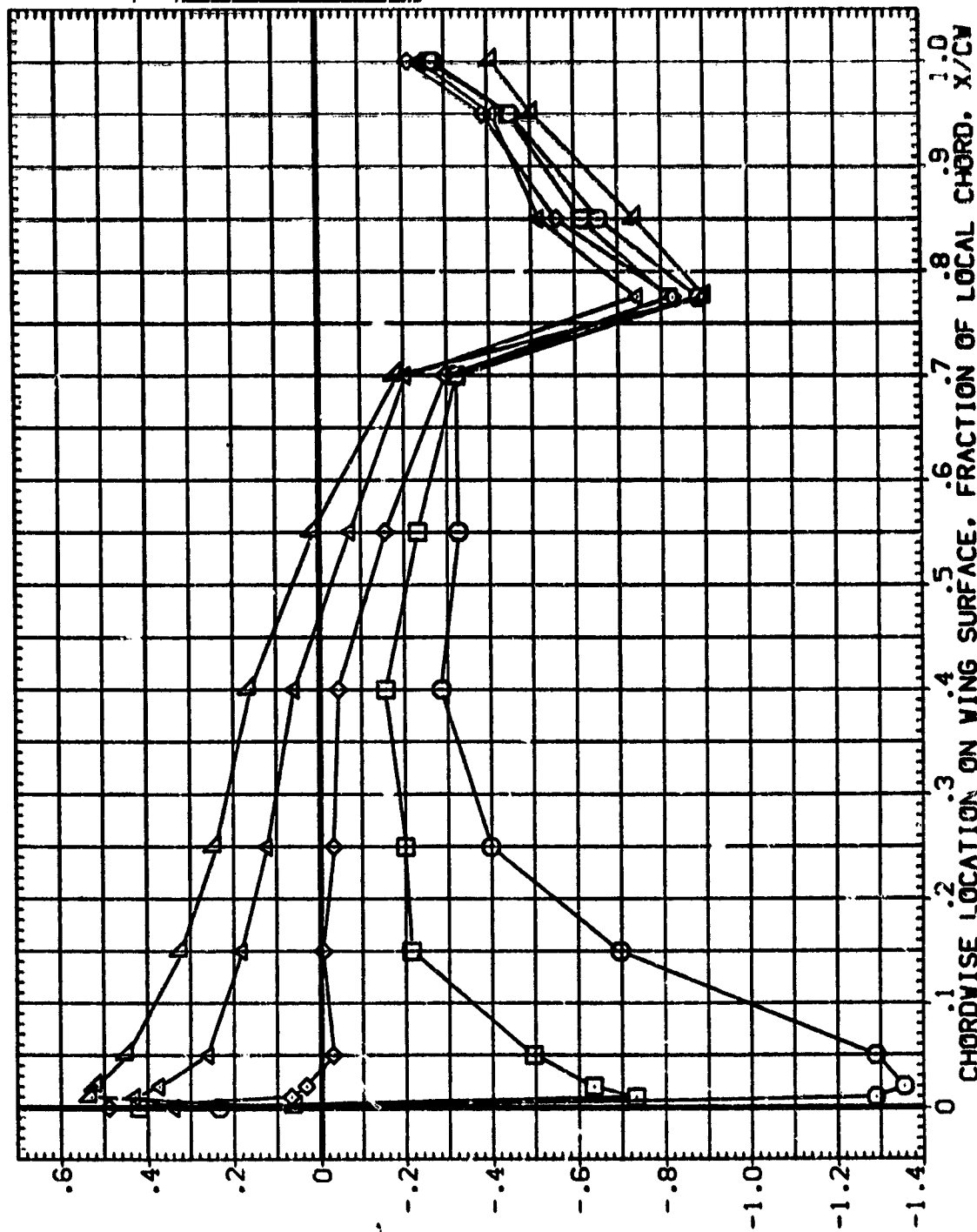


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(OA148) -140A/B/C ORB LEFT WING BJT(IE8L74)

SYMBOL
 ▽ ◆ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .887
 BETA .000

PARAMETRIC VALUES
 RUDDER -5.000 SP7BRK 55.000
 R-ELVN 16.7% L-ELVN -10.000
 R-ELVN -10.000 MACH .900

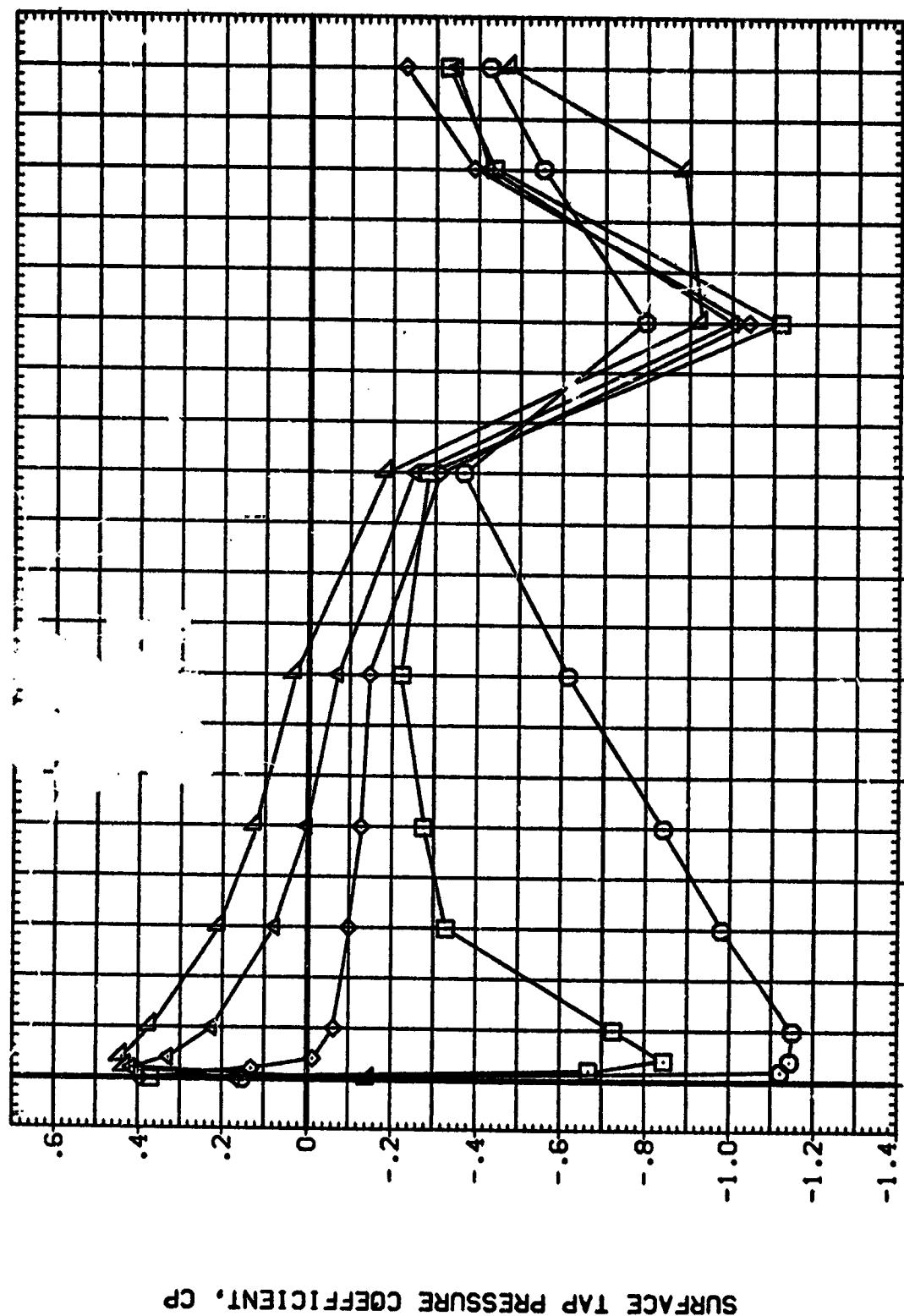


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .972

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRBK
 L-ELVN
 MACH

55.000
 -10.000
 .900

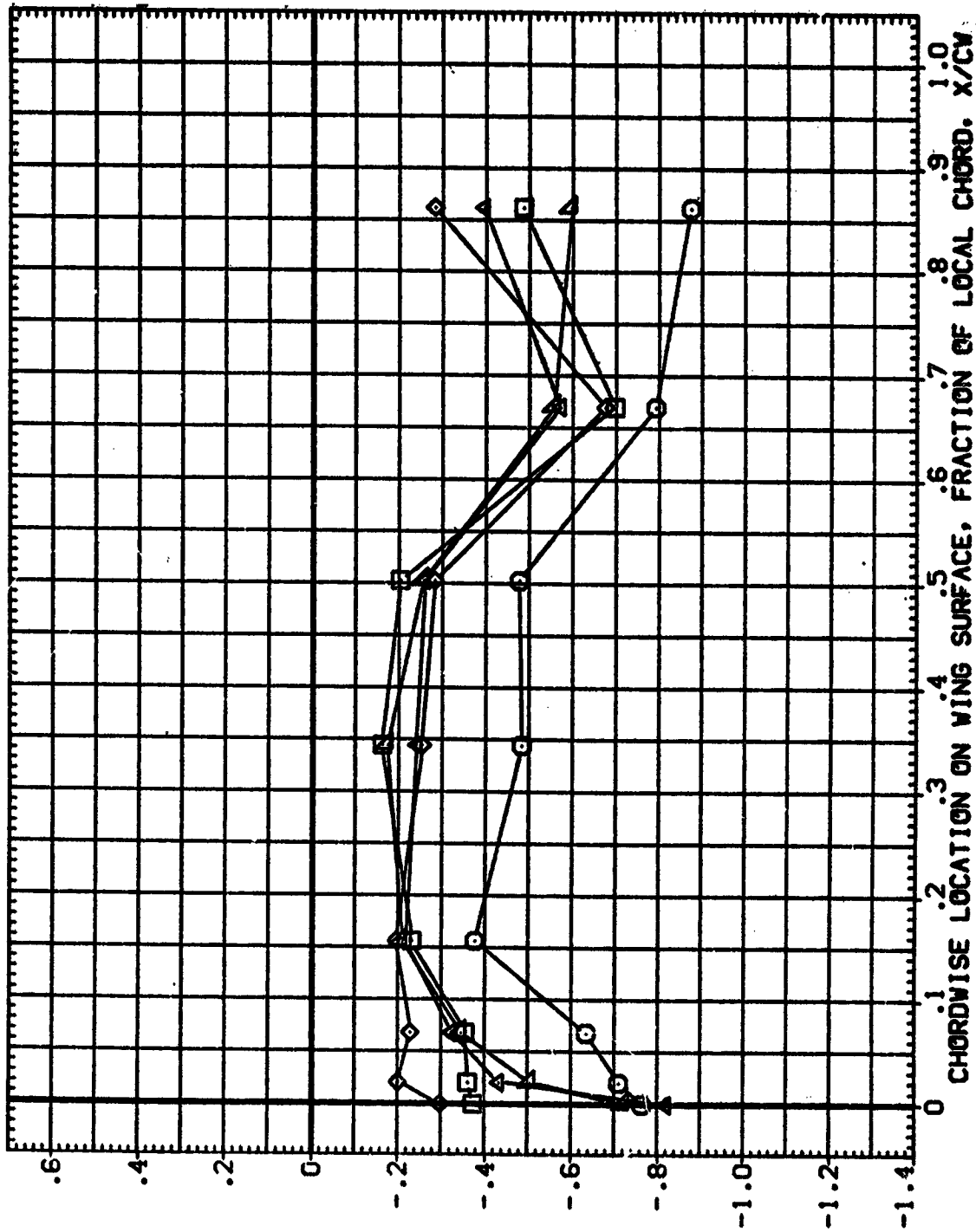


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L74)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
▽	-4.000	.259	4.000	RUDDER
◇	.000			BOFLAP
□	4.000			R-ELVN
△	8.000			-10.000
	12.000			MACH
				55.000
				-10.000
				.500

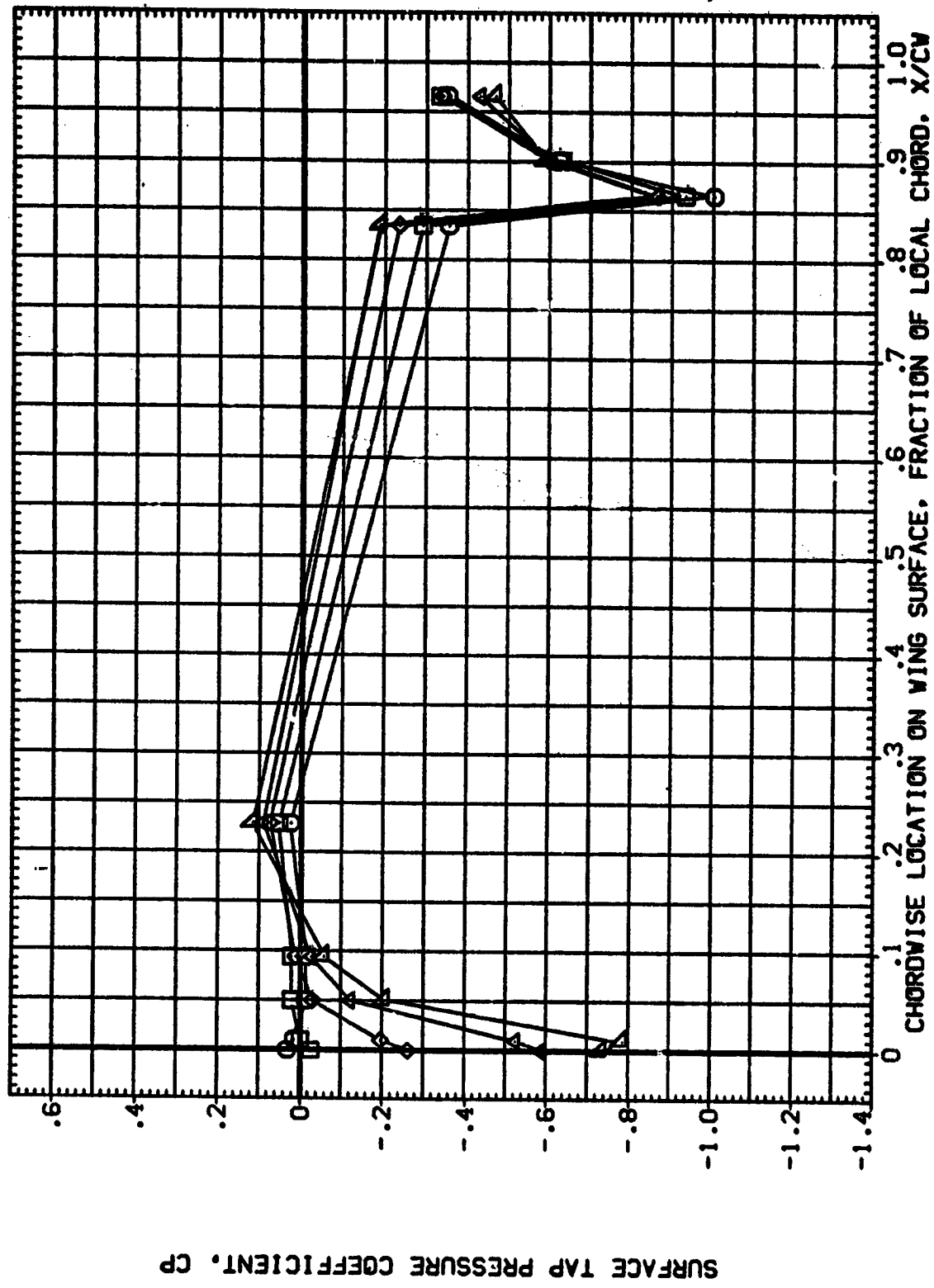


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .427
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

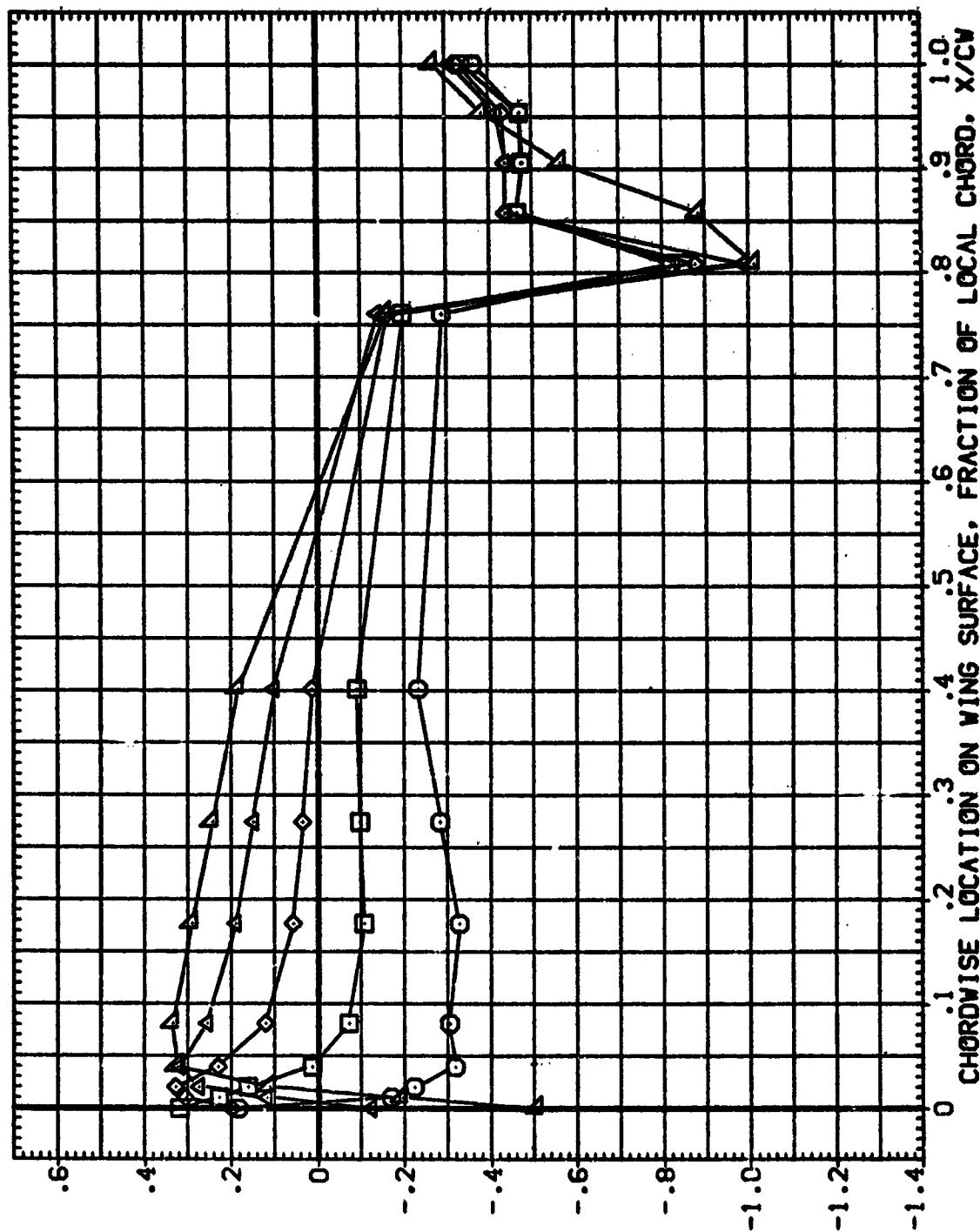


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L74)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .673
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

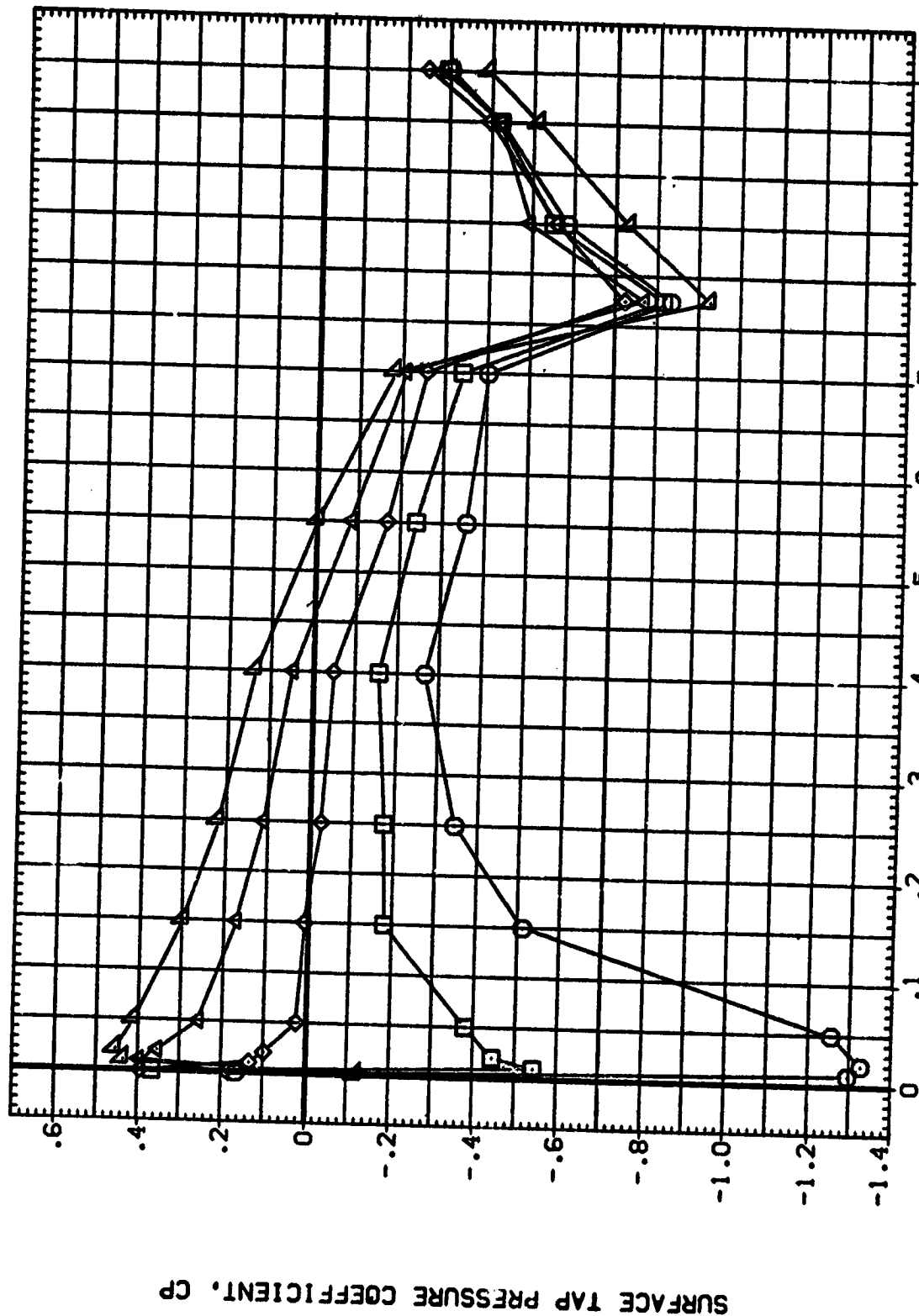


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E6L74)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .687

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRK
 L-ELVN
 MACH

55.000
 -10.000
 .900

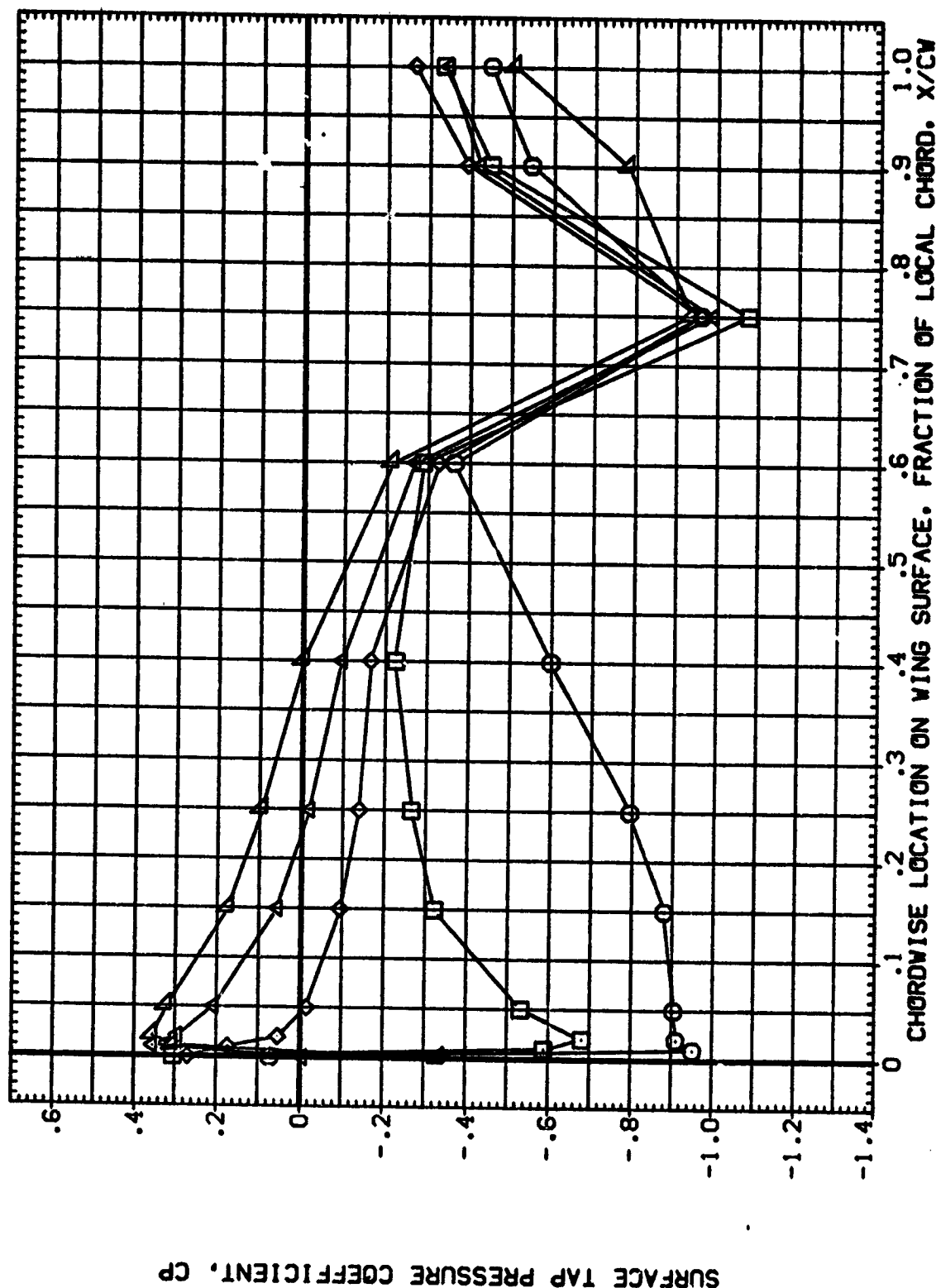


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

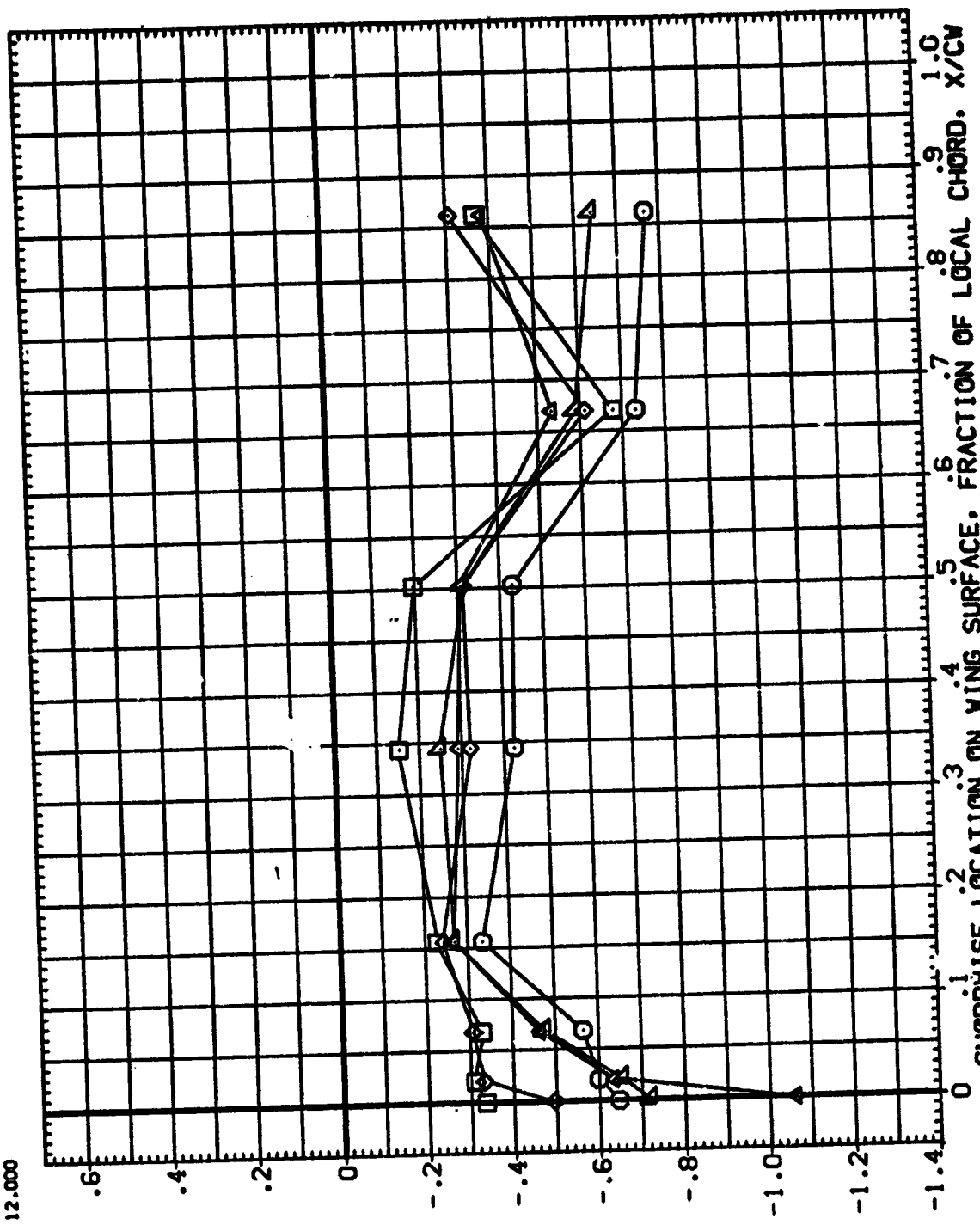
AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L74)

SYMBOL
 ▲
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN .972
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L73)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

BETA
 -4.000

RUDDER
 BDFLAP
 R-ELVN

-5.000
 16 300
 -10.000

SPDRBK
 L-ELVN
 MACH

55.000
 -10.000
 1.100

SURFACE TAP PRESSURE COEFFICIENT, CP

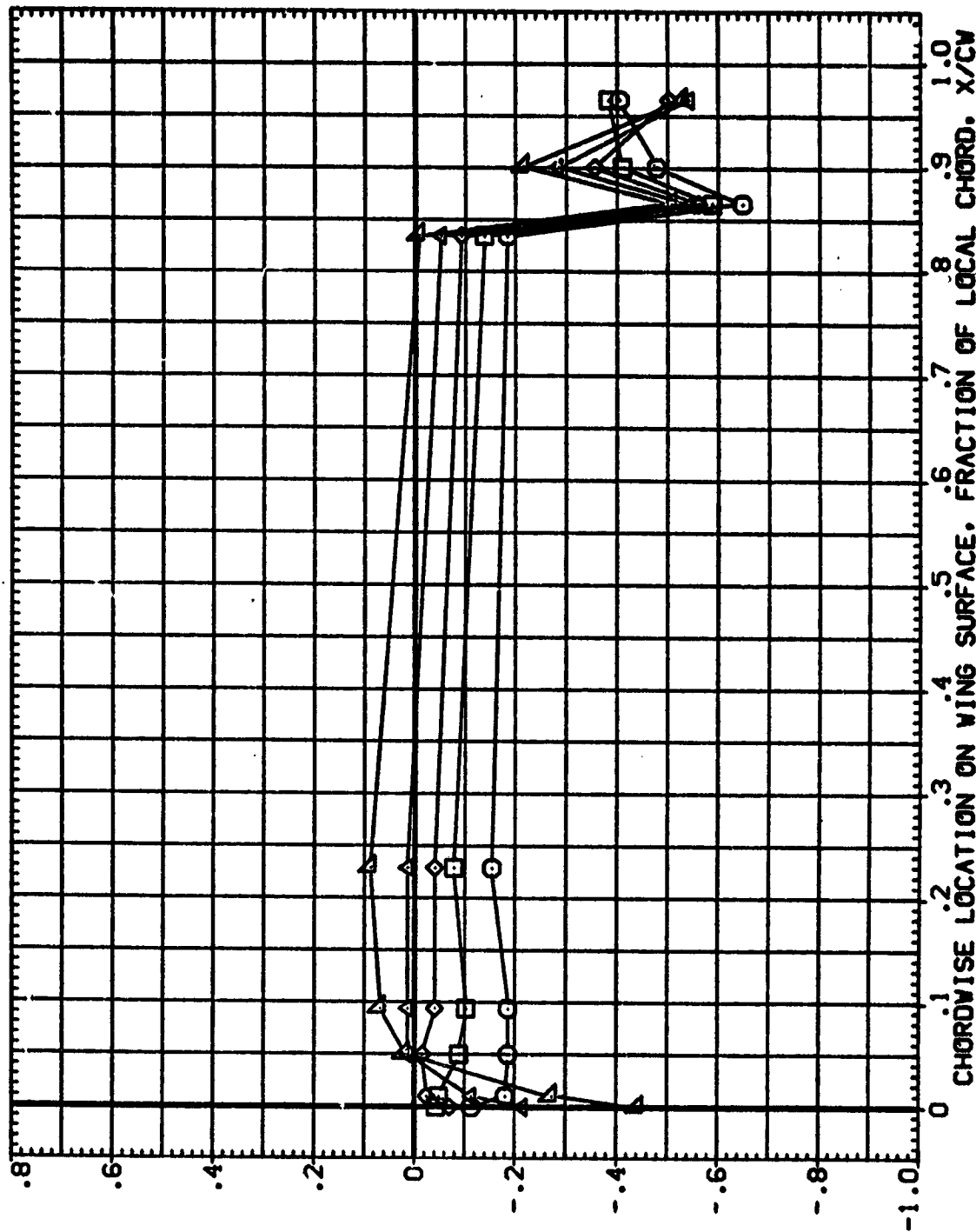


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L73)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .427
 BETA -4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 50.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.100

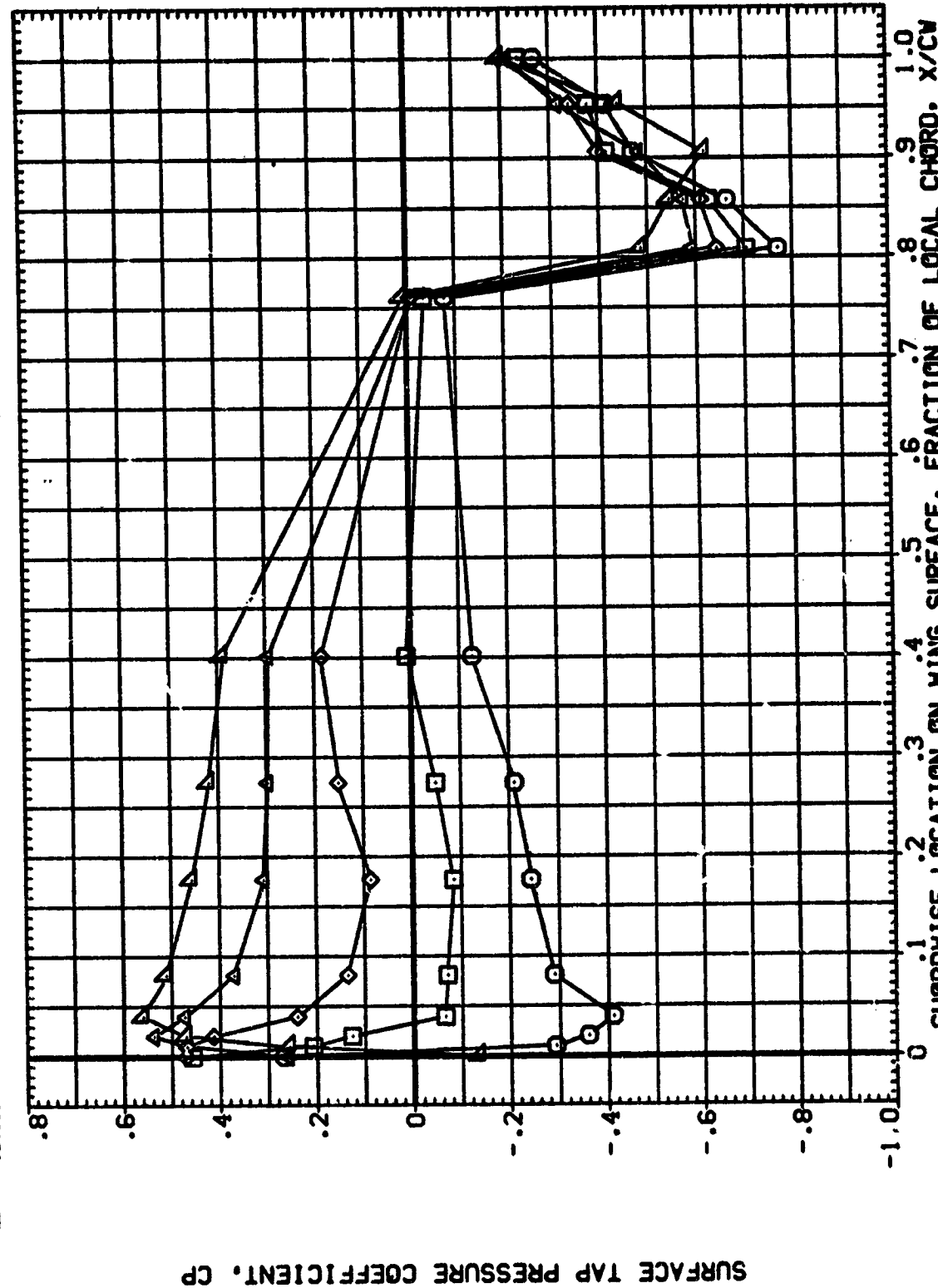


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(OA148) -140A/B/C ORB LEFT WING BOT(IE8L73)

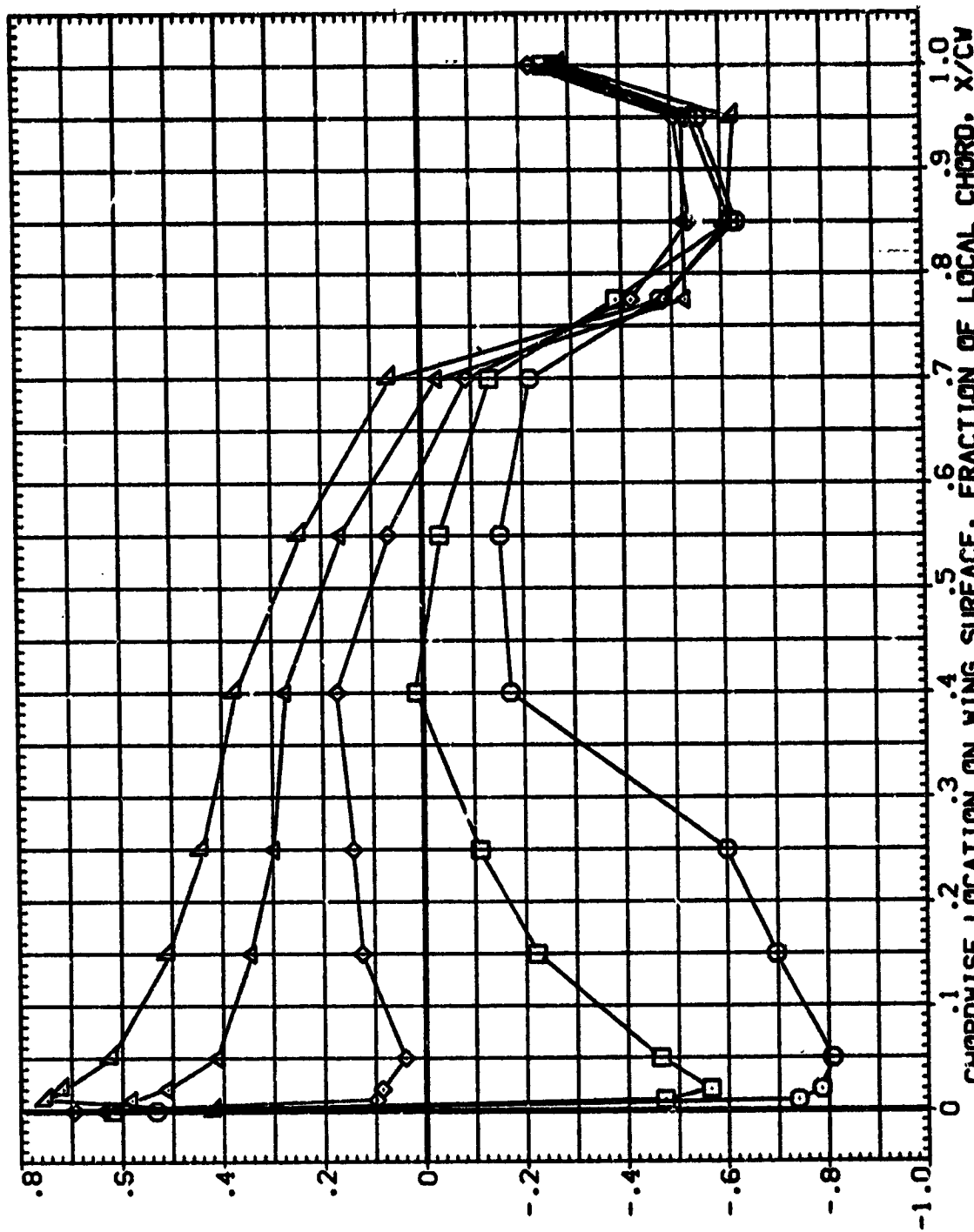
SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2V/BN
 .673

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPDRBK
 L-ELVN
 MACH
 95.000
 -10.000
 1.100



SURFACE TAP PRESSURE COEFFICIENT, CP

CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/C

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L73)

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

27/8V BETA
 .887 -4.000

RUDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRX 55.000
 16.300 L-ELVN -10.000
 -10.000 MACH 1.100

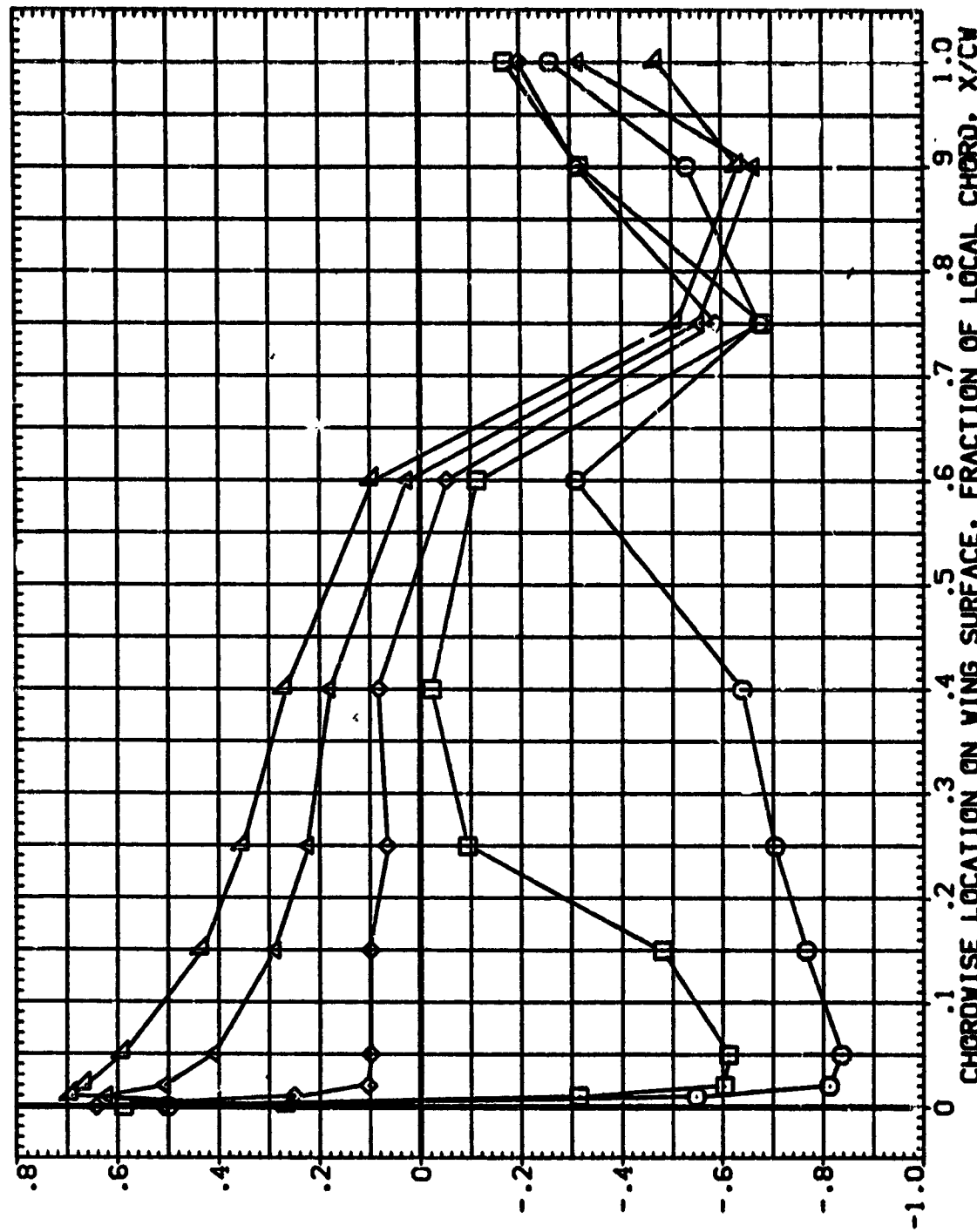


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(QA148) -140A/B/C ORB LEFT WING BOT(IE8L73)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZI/BN
 .972

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPOBRK
 L-ELVN
 MACH
 55.300
 -10.000
 1.100

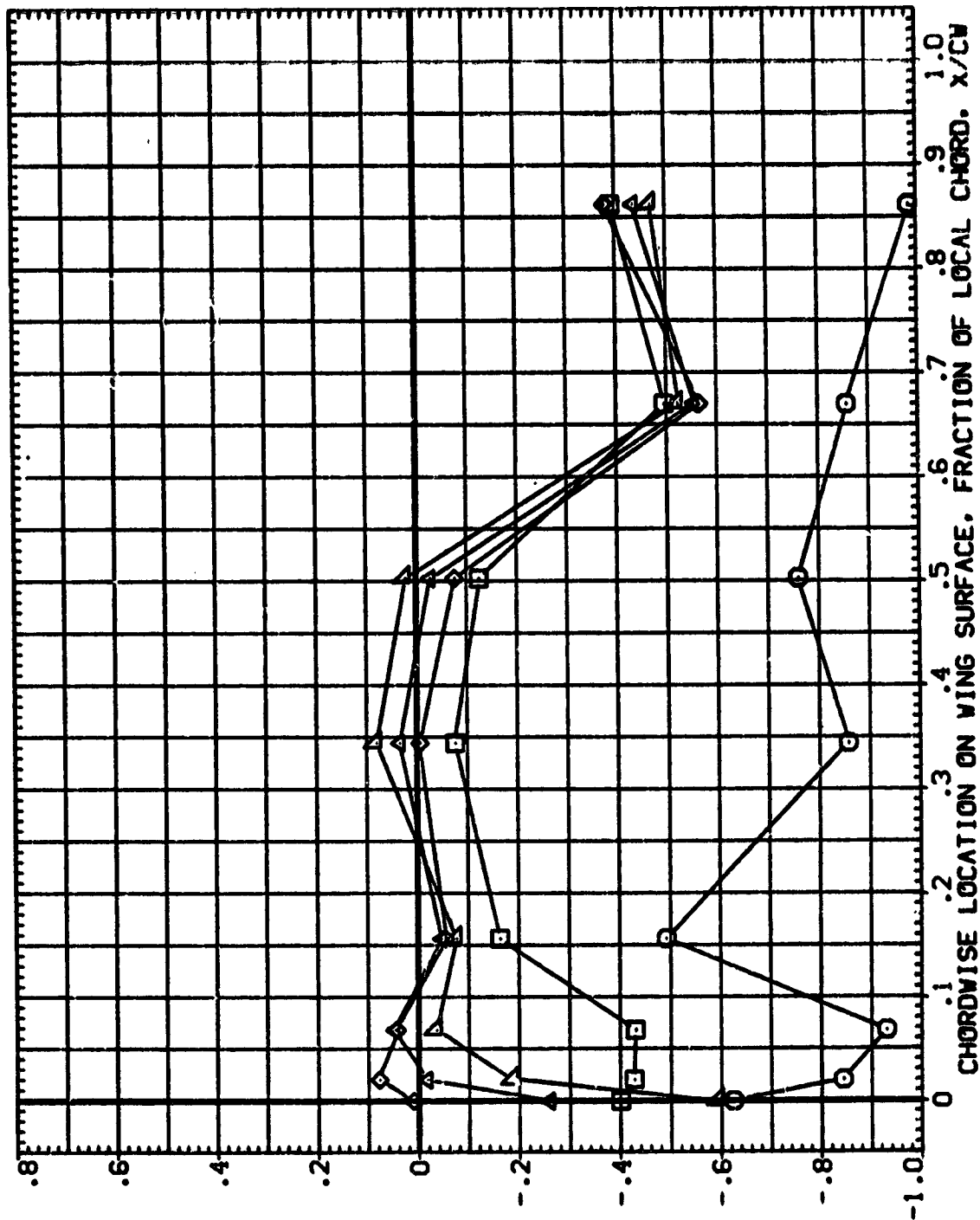


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L73)

SYMBOL	ALPHA	2Y/BV	BETA	RUDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRBK	L-ELVN	MACH
▽	-4.000	.299	.000	-5.000	16.300	-10.000	55.000			
◇	.000			16.300			-10.000			
□	4.000			-10.000			1.100			
▽	8.000									
▽	12.000									

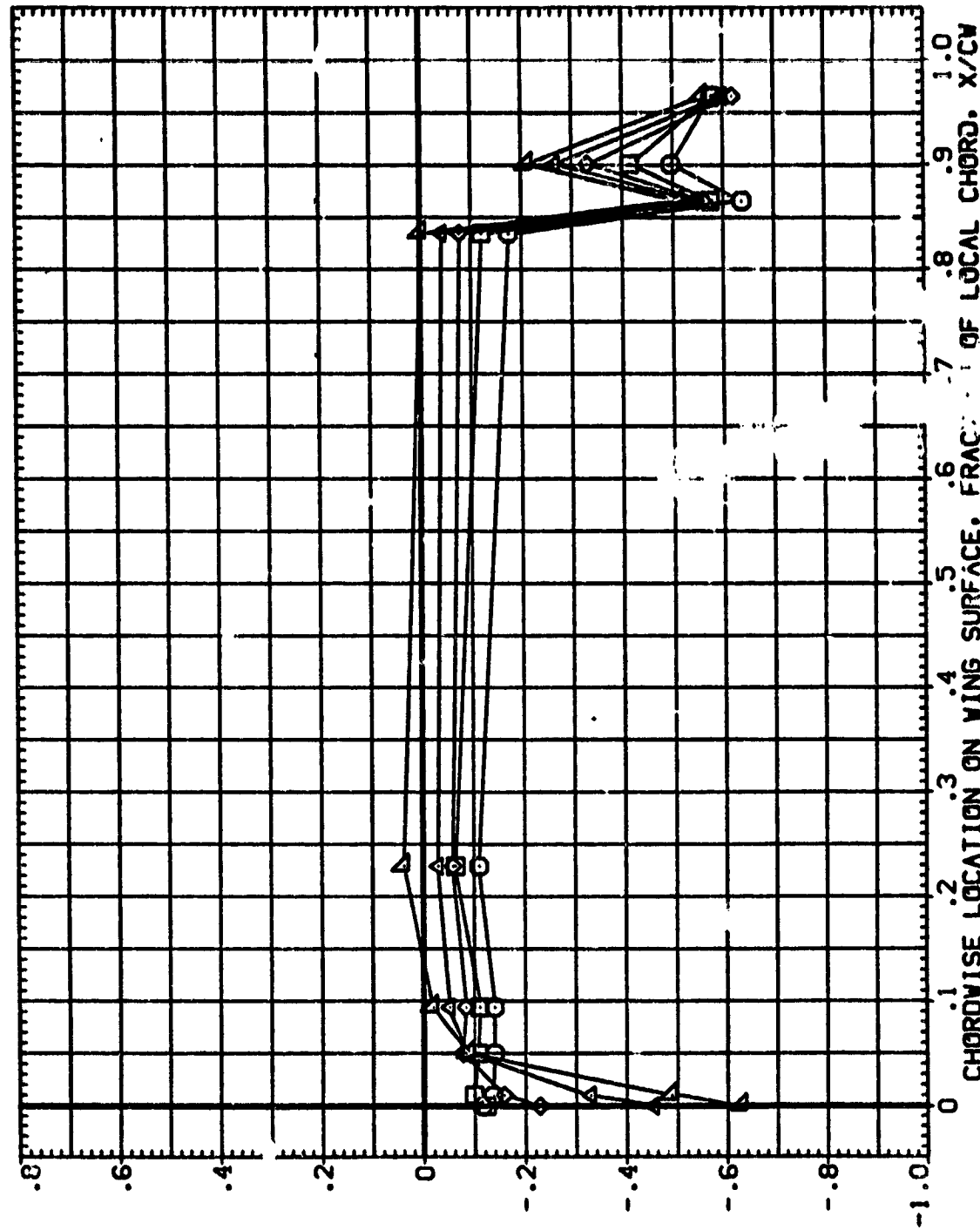


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L73)

SYMBOL
 ▽
 ◇
 ◻
 ◊
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .427

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRK
 L-ELVN
 PACH

55.000
 -10.000
 1.100

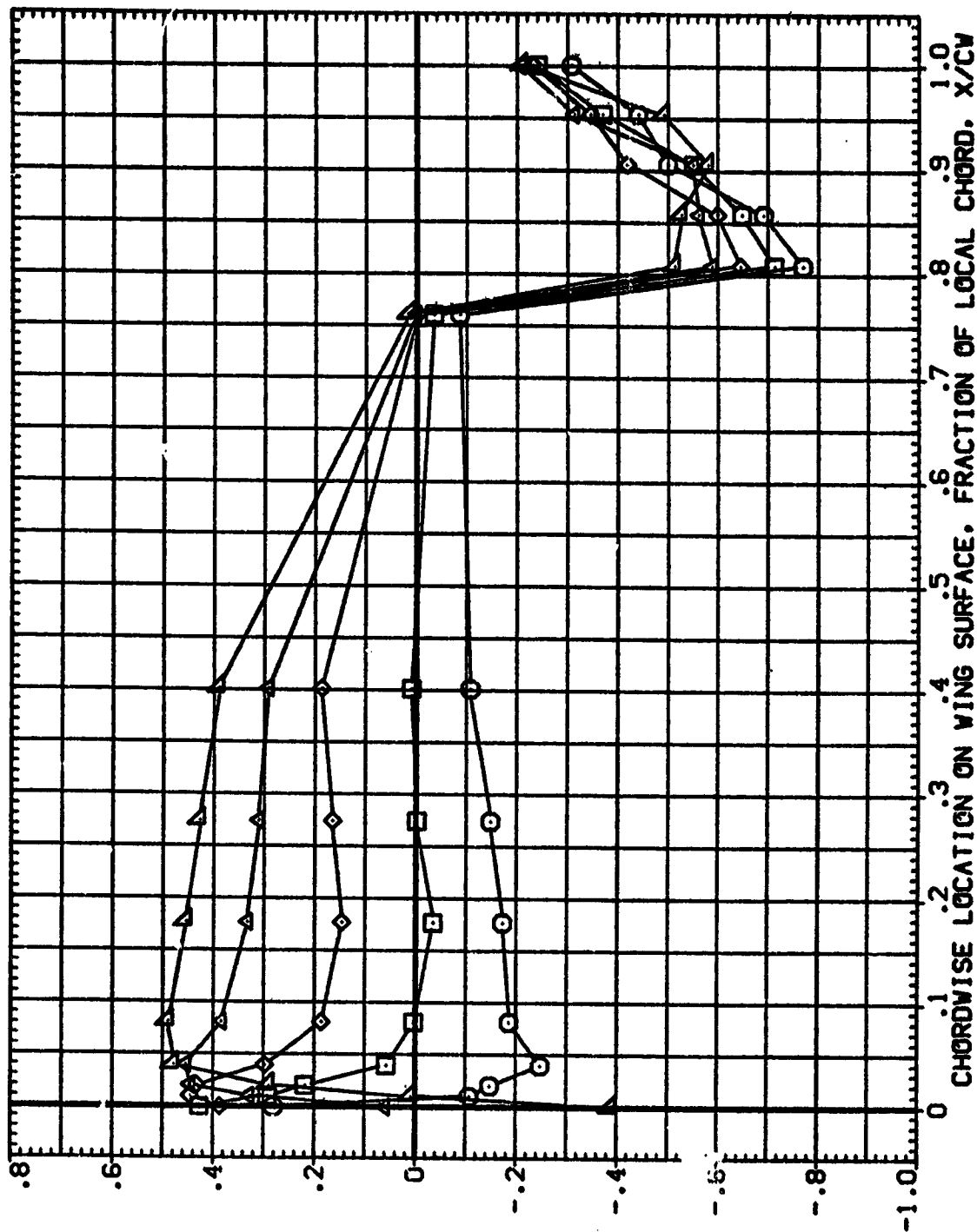


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L73)

SYMBOL
 ▽
 ◇
 ◊
 □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .673

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRX
 L-ELVN
 MACH

55.000
 -10.000
 1.100

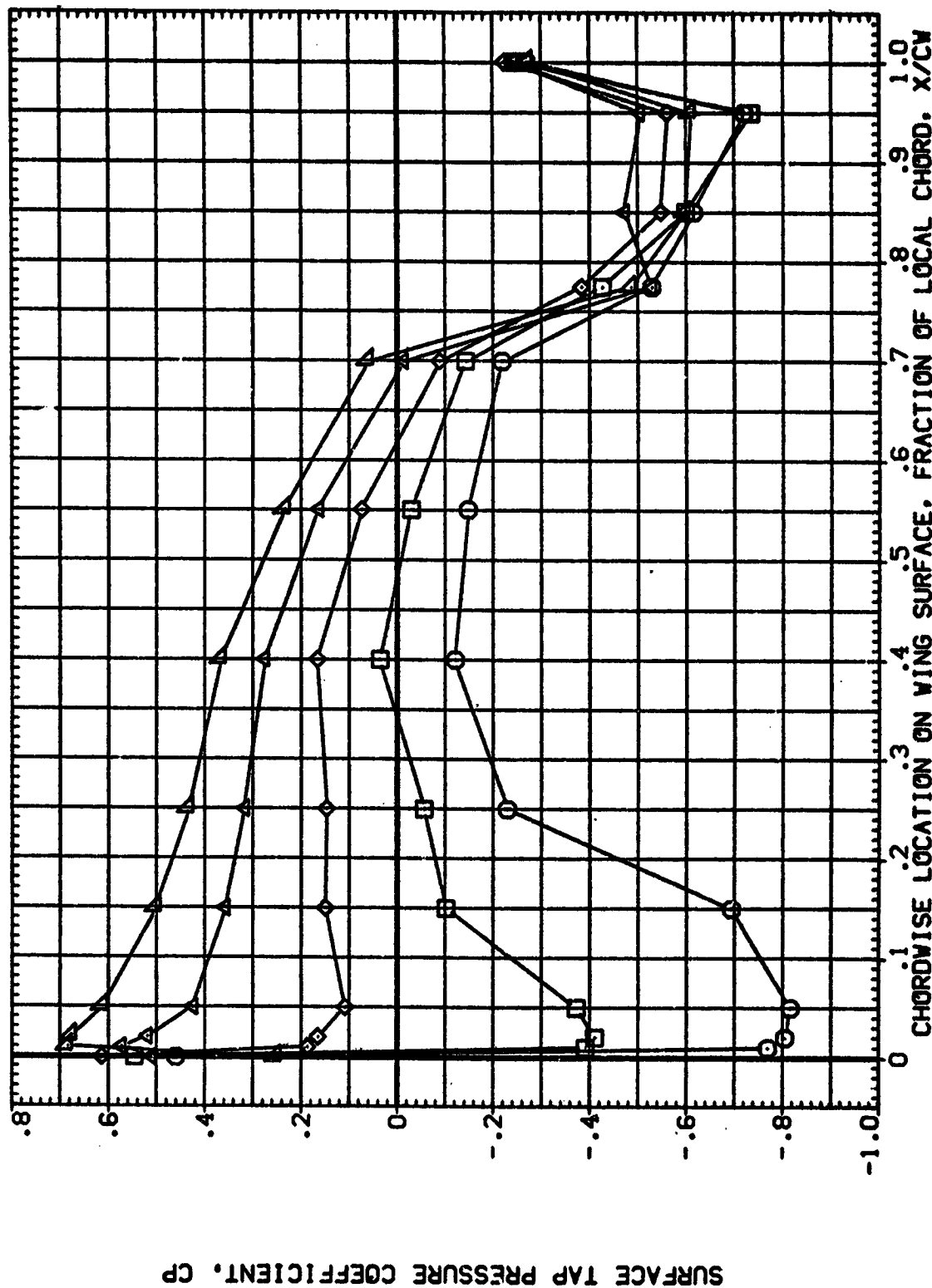


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L73)

PARAMETRIC VALUES
 RUDDER -5.000 SP08RK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.100

ALPHA 27/BN BETA
 -4.000 .000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ○

SURFACE TAP PRESSURE COEFFICIENT, CP

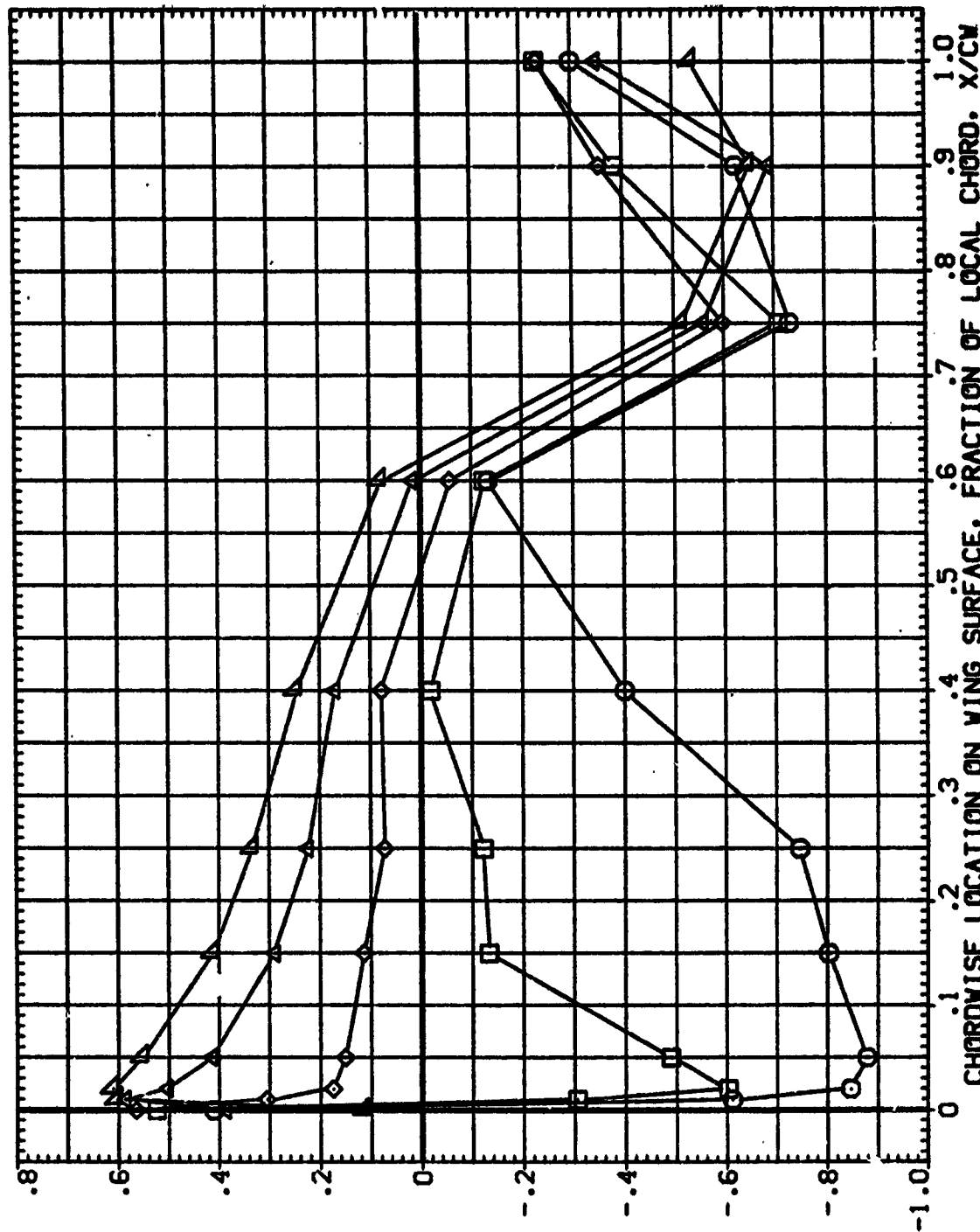


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L73)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/SV

BETA

.972 .000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRBK
 16.308 L-ELVN
 -10.000 MACH

55.000
 -10.000
 1.100

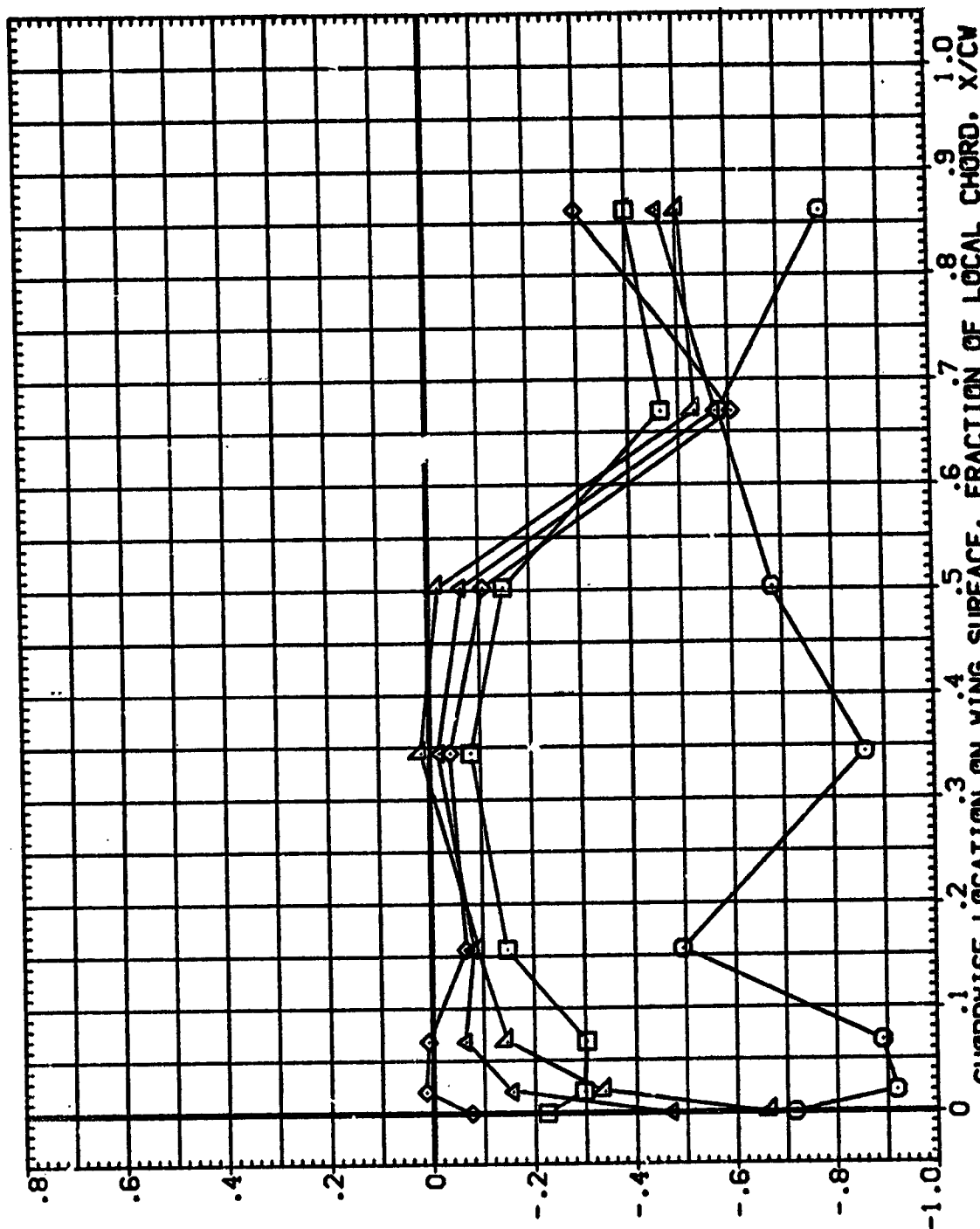


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 1.100

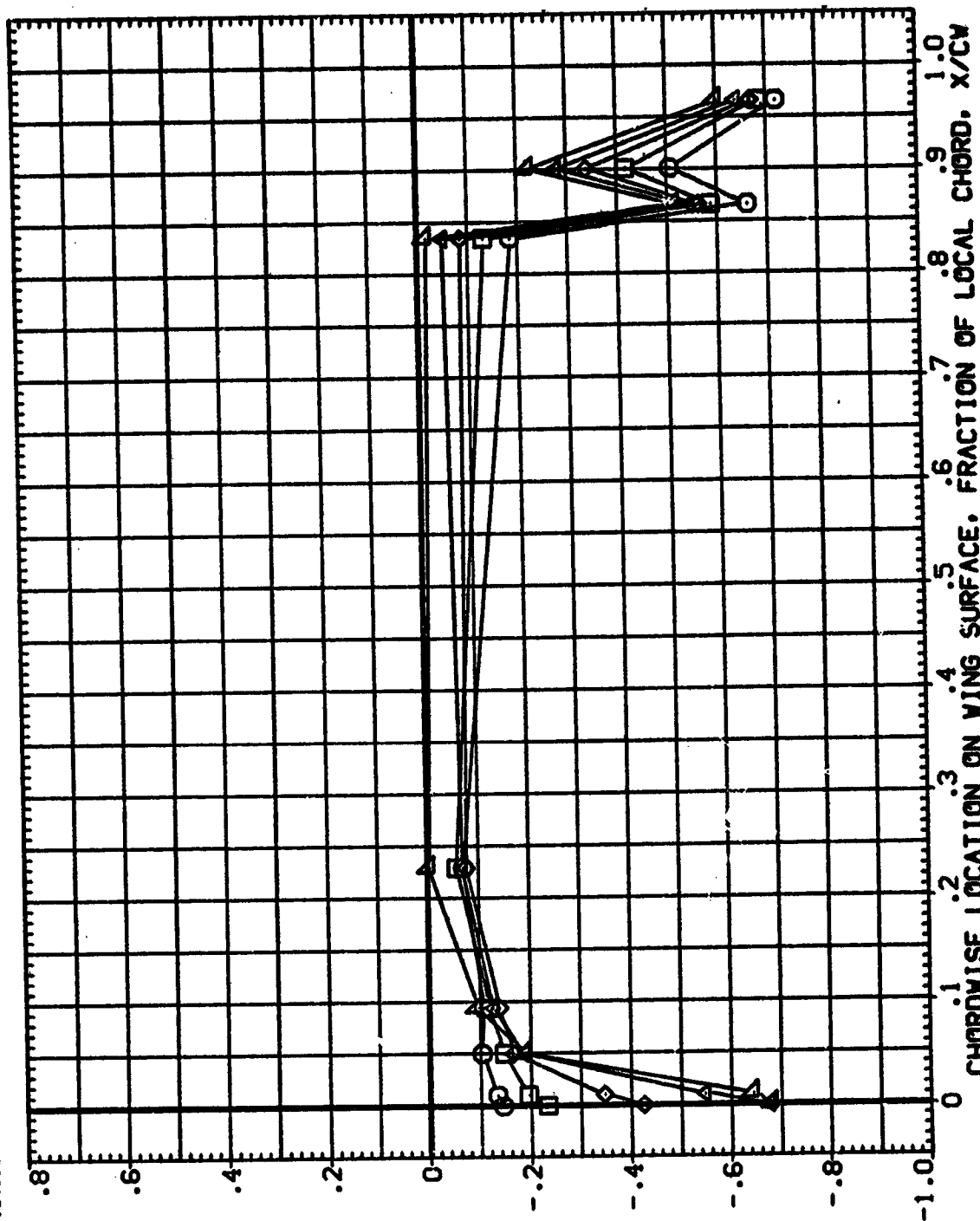


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L73)

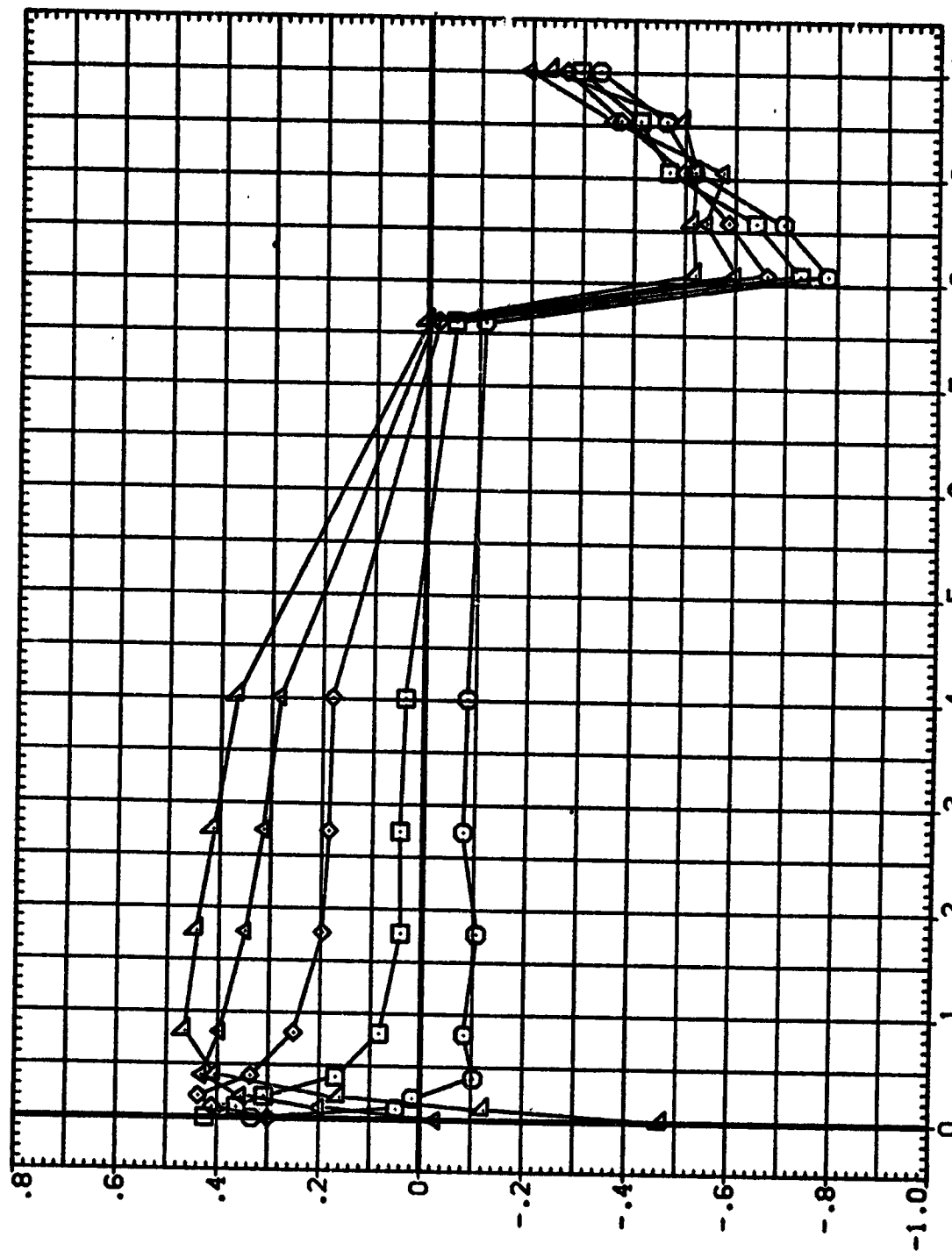
SYMBOL
 ▴
 □
 ◇
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BN .427

BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.100



CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/C

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

PARAMETRIC VALUES
 RIDGER -5.000 SPDRWK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.100

ALPHA 2Y/BN BETA
 -4.000 .573 4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◊
 □
 ○

SURFACE TAP PRESSURE COEFFICIENT, CP

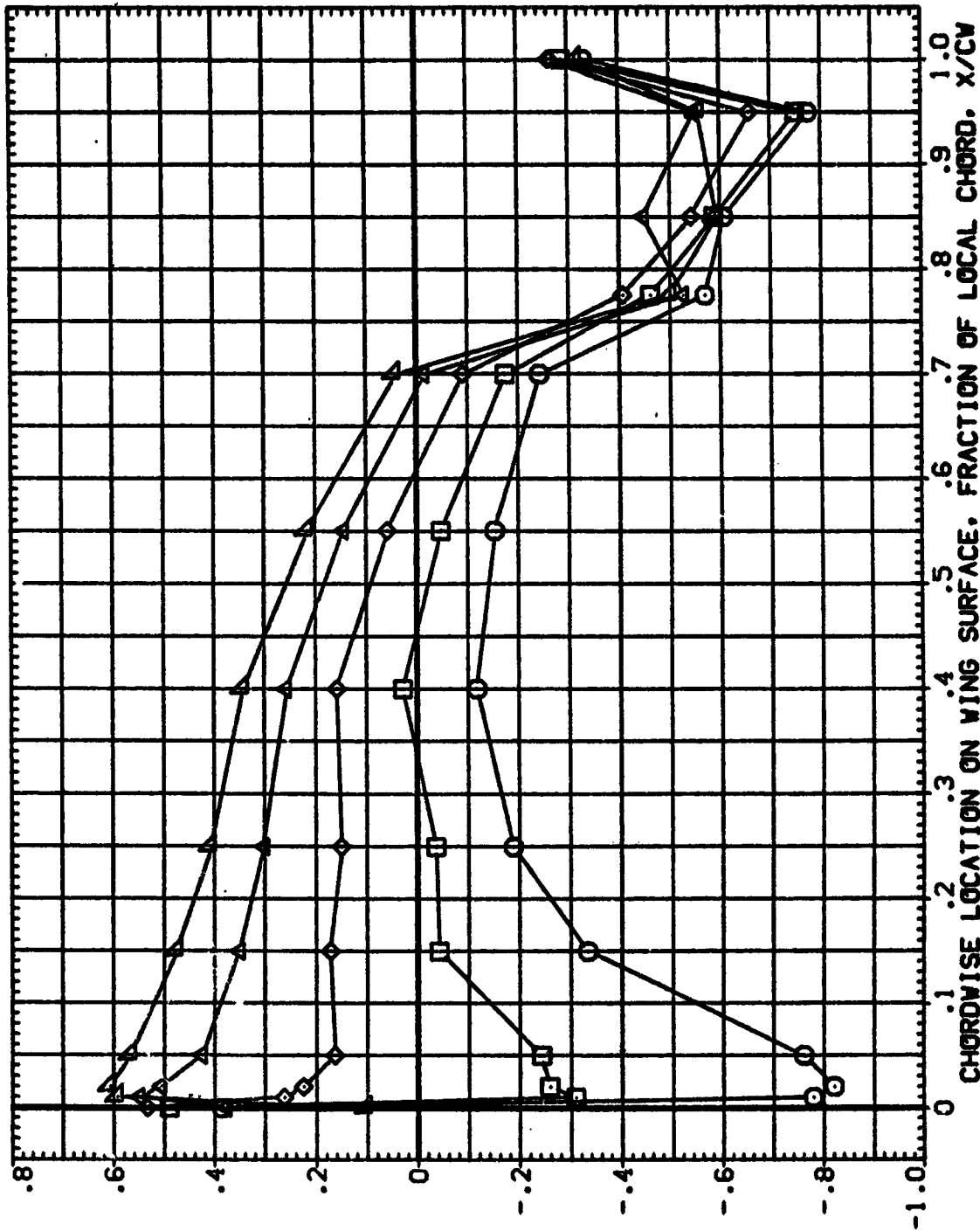


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L73)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BV .887
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 80FLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.100

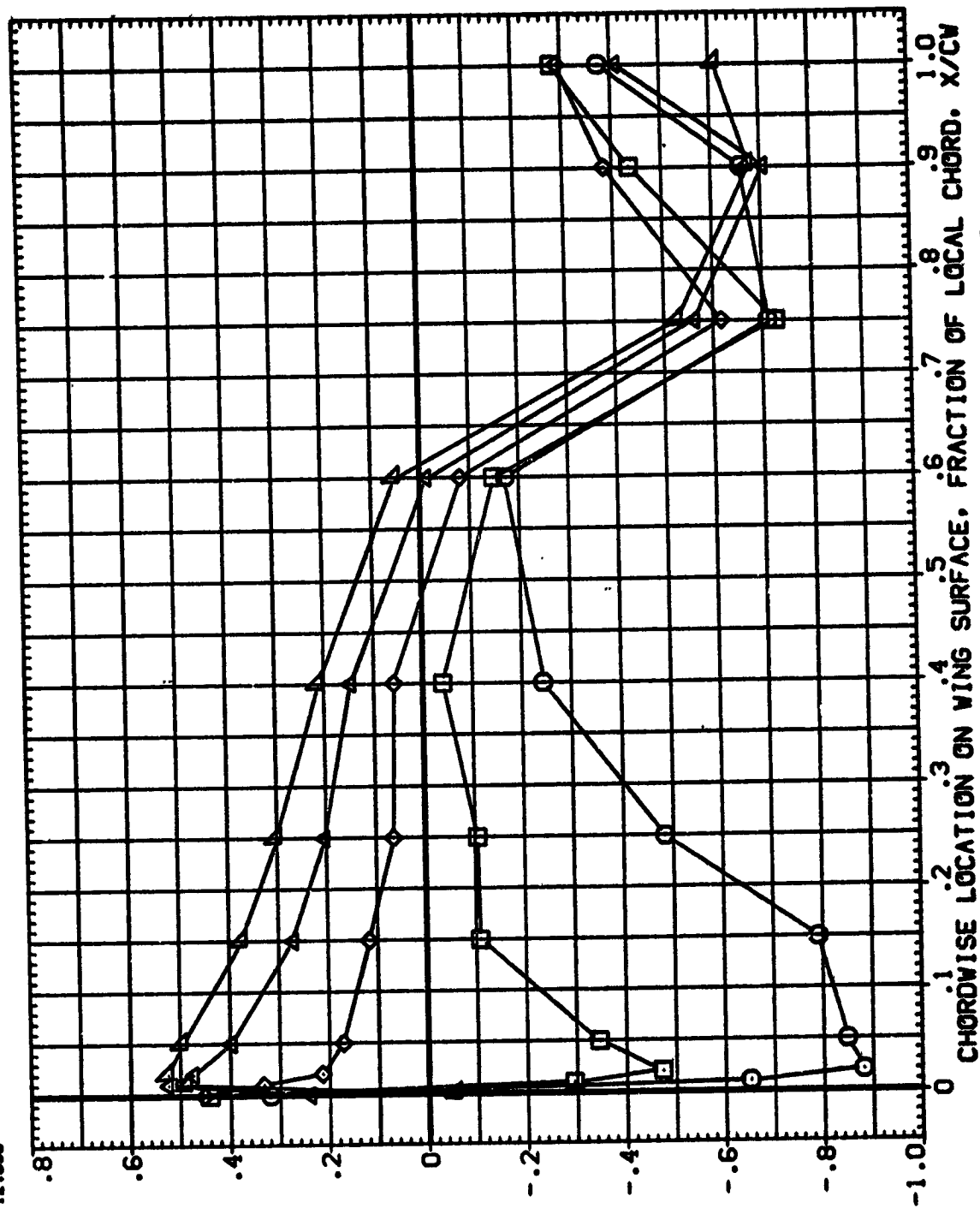


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z1/BV
 .972

BETA
 4.000

PARAMETRIC VALUES

RUDDER
 80FLAP
 R-ELVN

SPDRBK
 L-ELVN
 MACH

55.000
 -10.000
 1.100

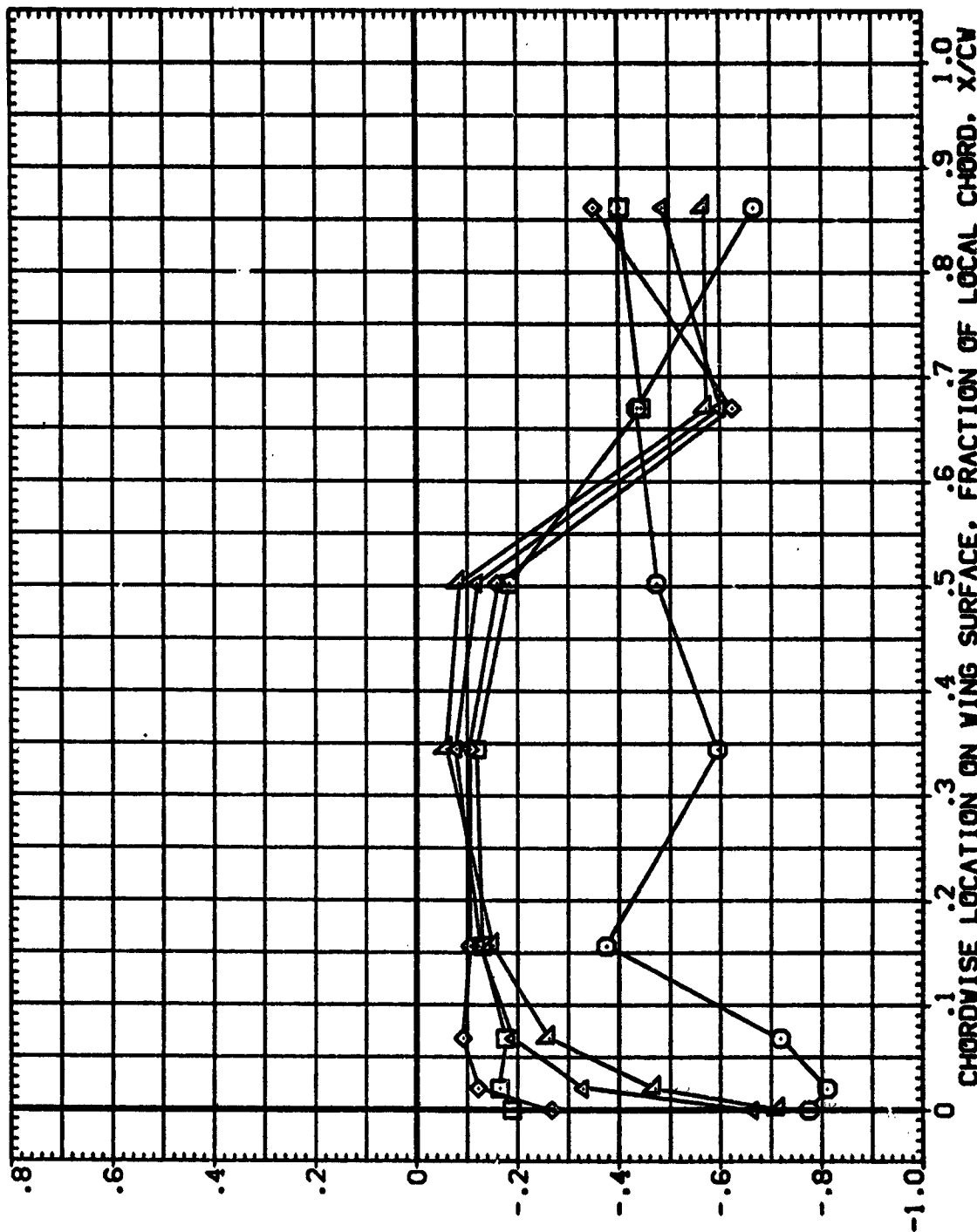


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L72)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .259

BETA
 -4.000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRK
 16.300 L-ELVN
 -10.000 MACH

55.000
 -10.000
 1.250

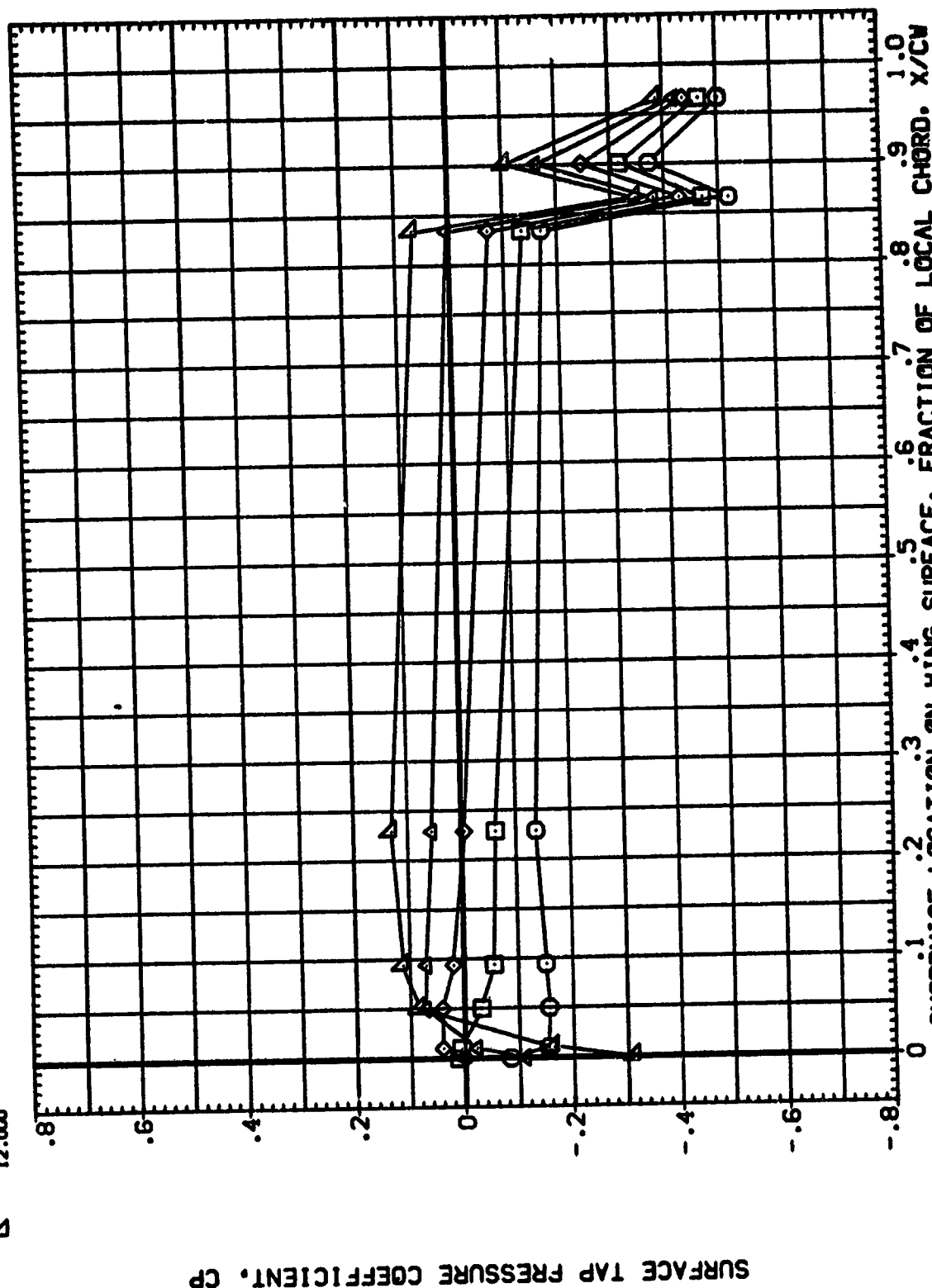


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZI/BN
 .427

BETA
 -4.000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SP1 30K
 16.000 L1 50
 -10.000 M1
 55.000
 -10.000
 1.250

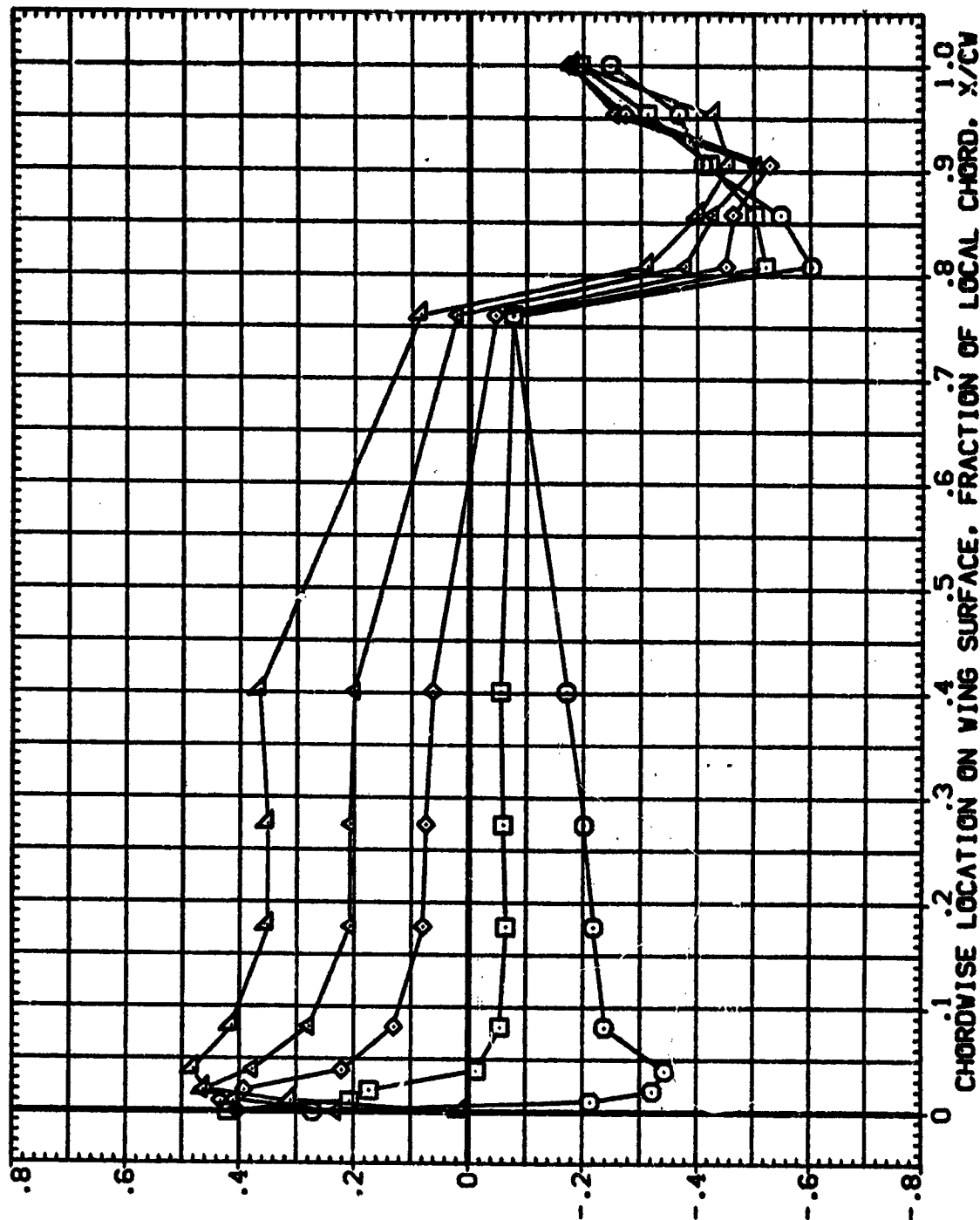


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L72)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
▽	-4.000	.673	-4.000	RUDDER
□	.000			BOFLAP
◇	4.000			R-ELVN
△	8.000			-5.000
	12.000			16.300
				-10.000
				1.230

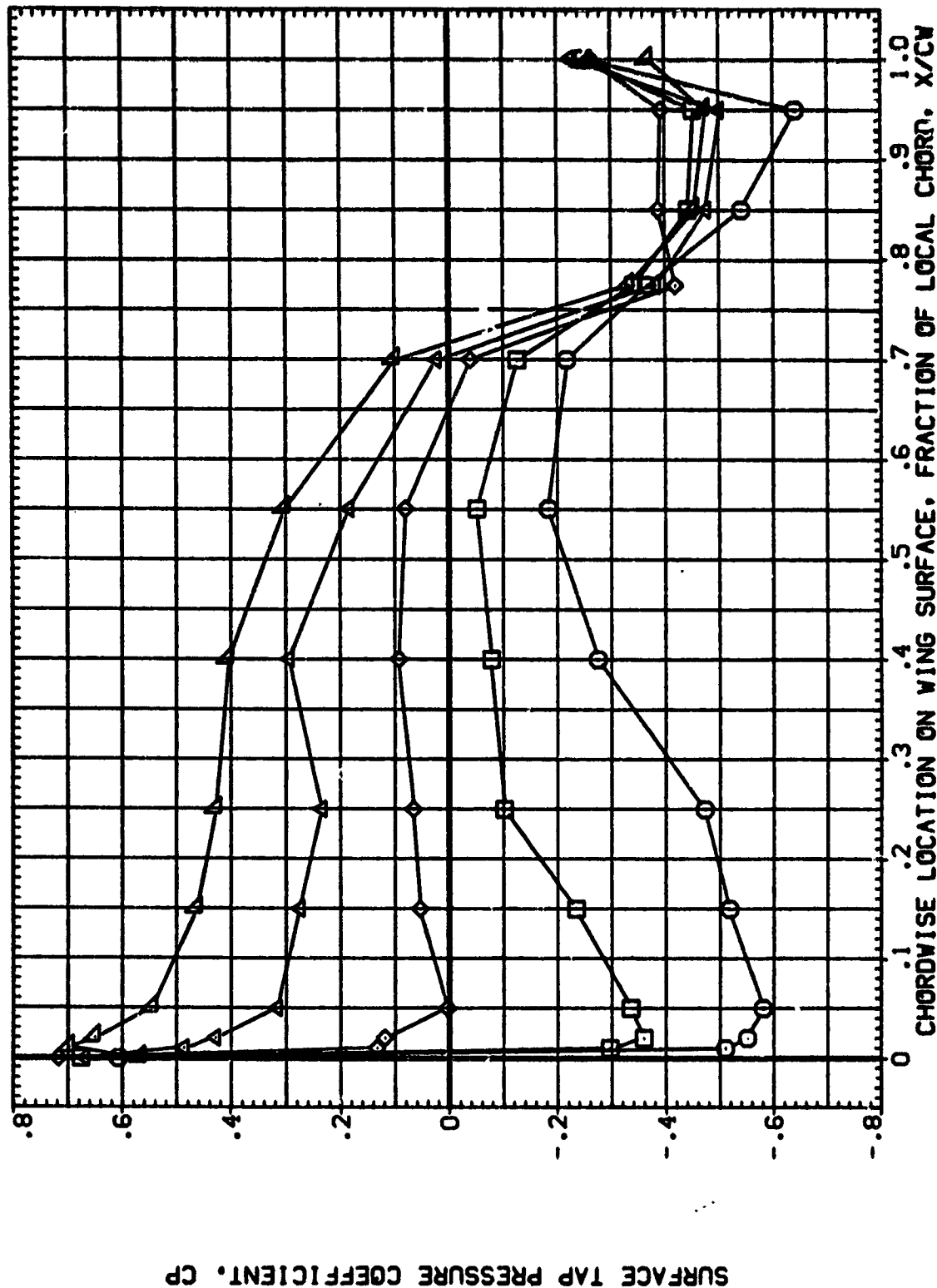


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L72)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BN
 .887

BETA
 -4.000

R-ODER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SP0BRK 55.000
 16.300 L-ELVN -10.000
 -10.000 NACH 1.250

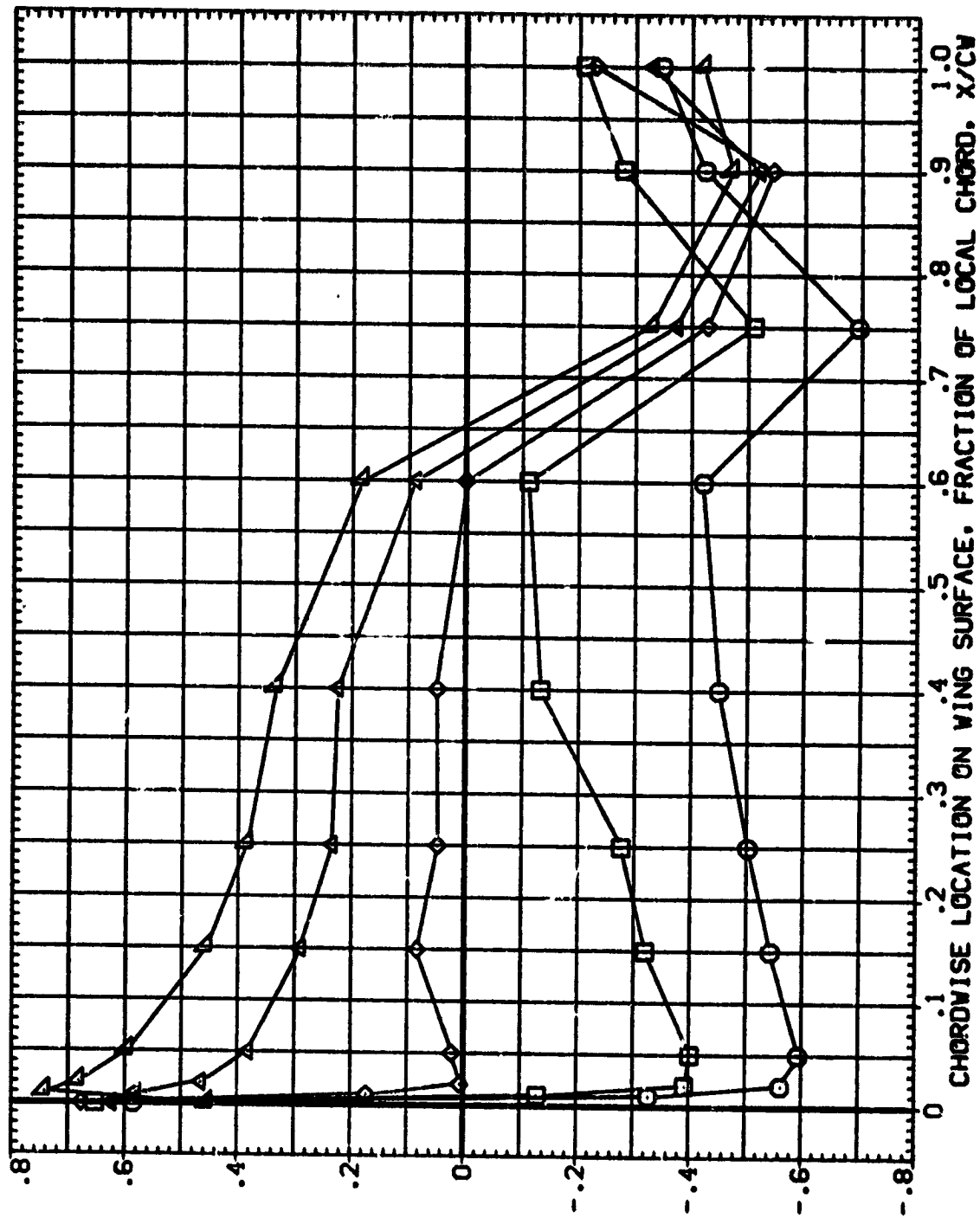


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L72)

SYMBOL	ALPHA	2Y/8V	BETA	RUDER	PARAMETRIC VALUES
○	-4.000	.972	-4.000	BOFLAP	-5.000 SPOBRK 55.000
□	.000			R-ELVN	16.300 L-ELVN -10.000
◇	4.000				-10.000 MACH 1.250
△	8.000				
▽	12.000				

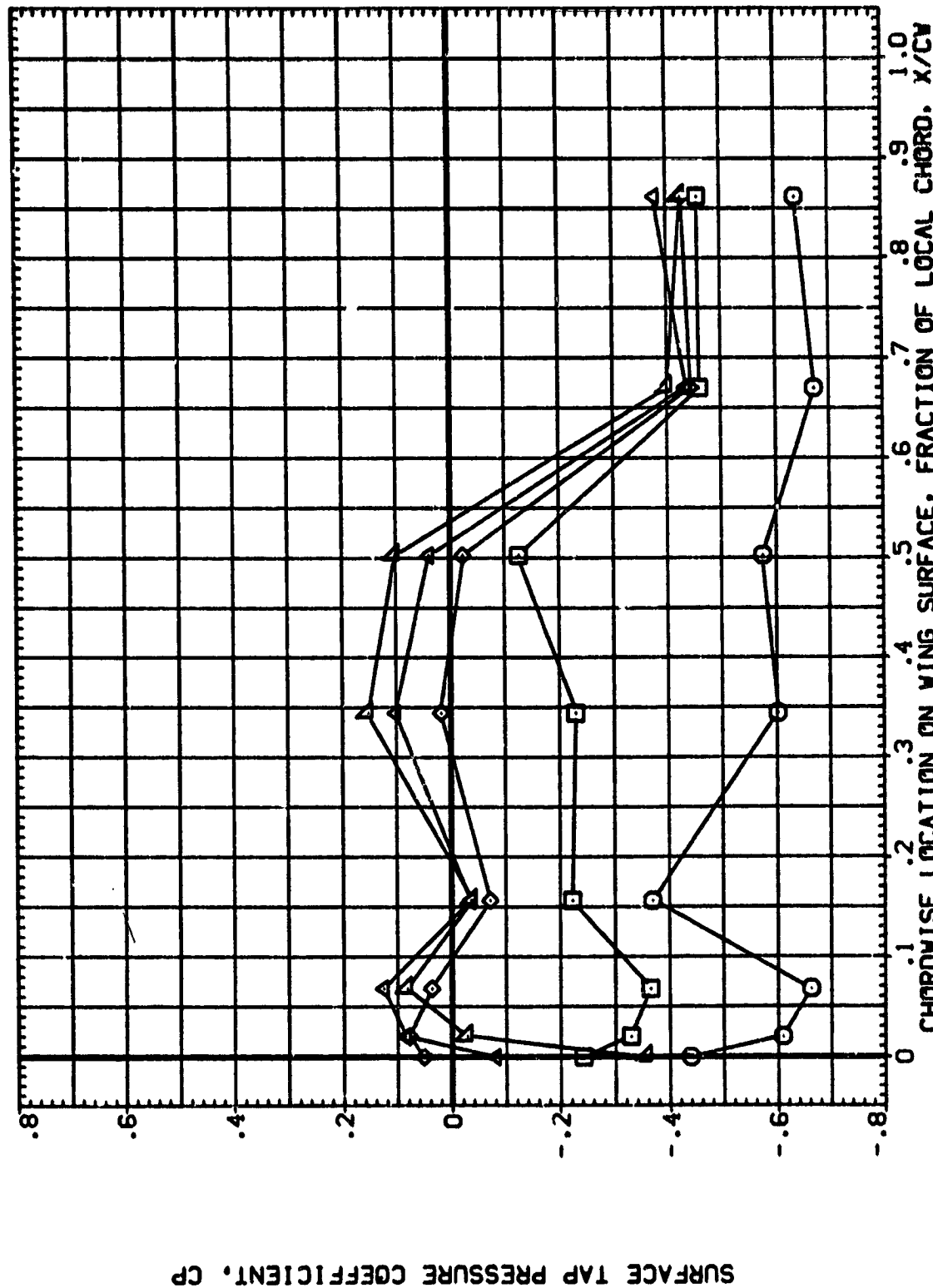


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL

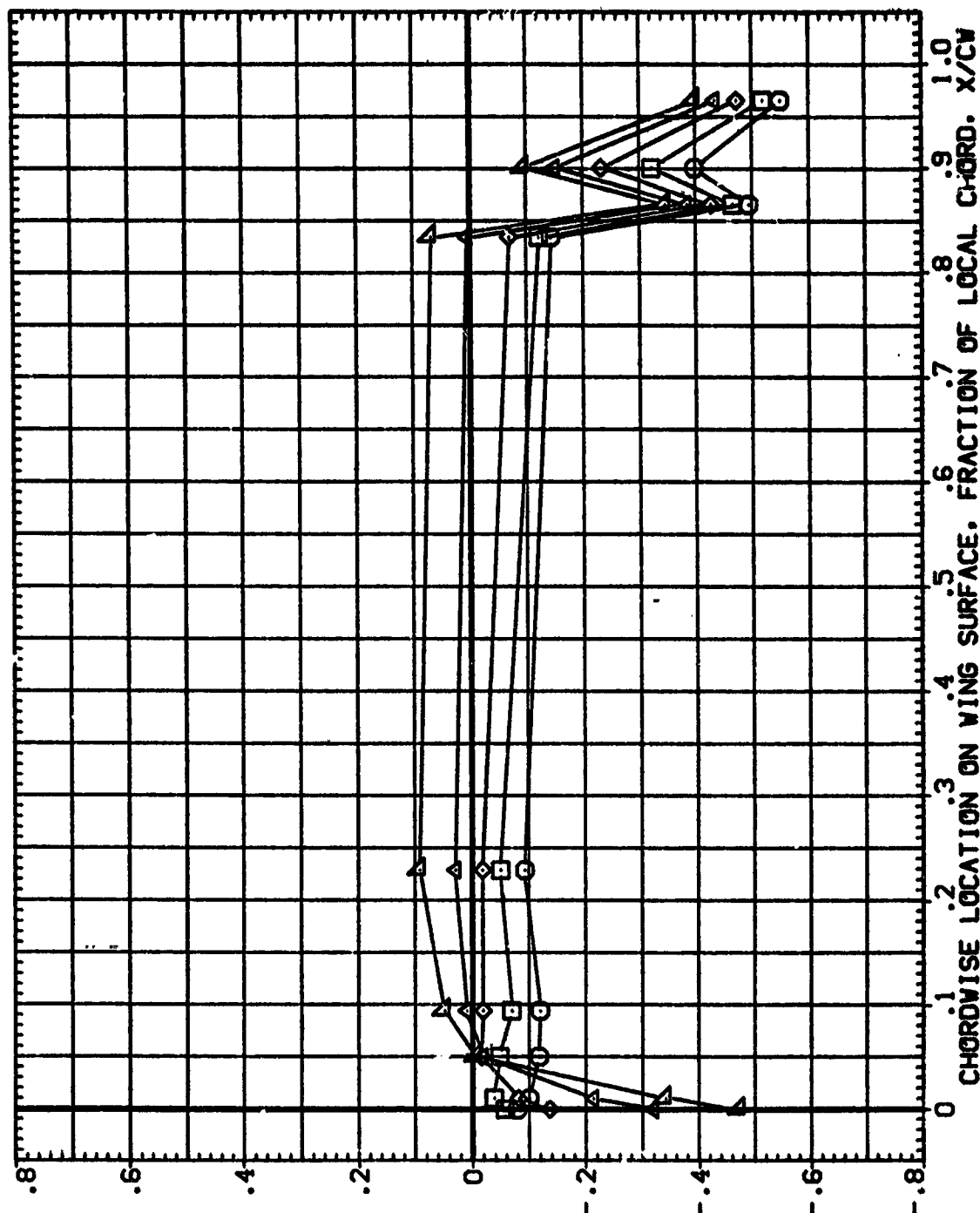
ALPHA
-4.000
.000
4.000
8.000
12.000

2V/BN
.299

BETA
.000
-

PARAMETRIC VALUES

RUDDER
BOFLAP
R-ELVN
-5.000
16.300
-10.000
SPDRX
L-ELVN
MACH
55.000
-10.000
1.250



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L72)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA 2Y/BN BETA
 -4.000 .427 .000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

SURFACE TAP PRESSURE COEFFICIENT, CP

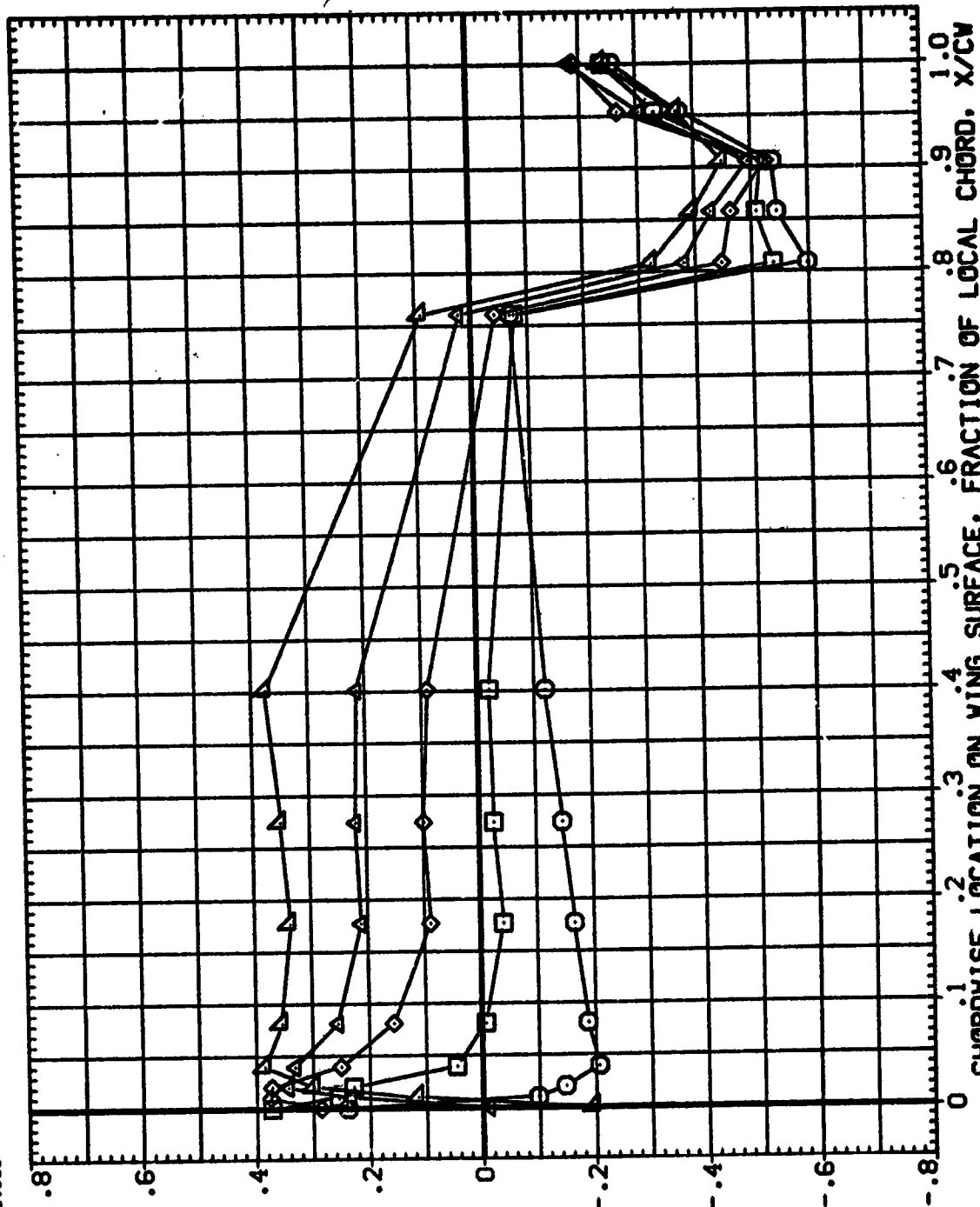


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .673
 BETA .000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

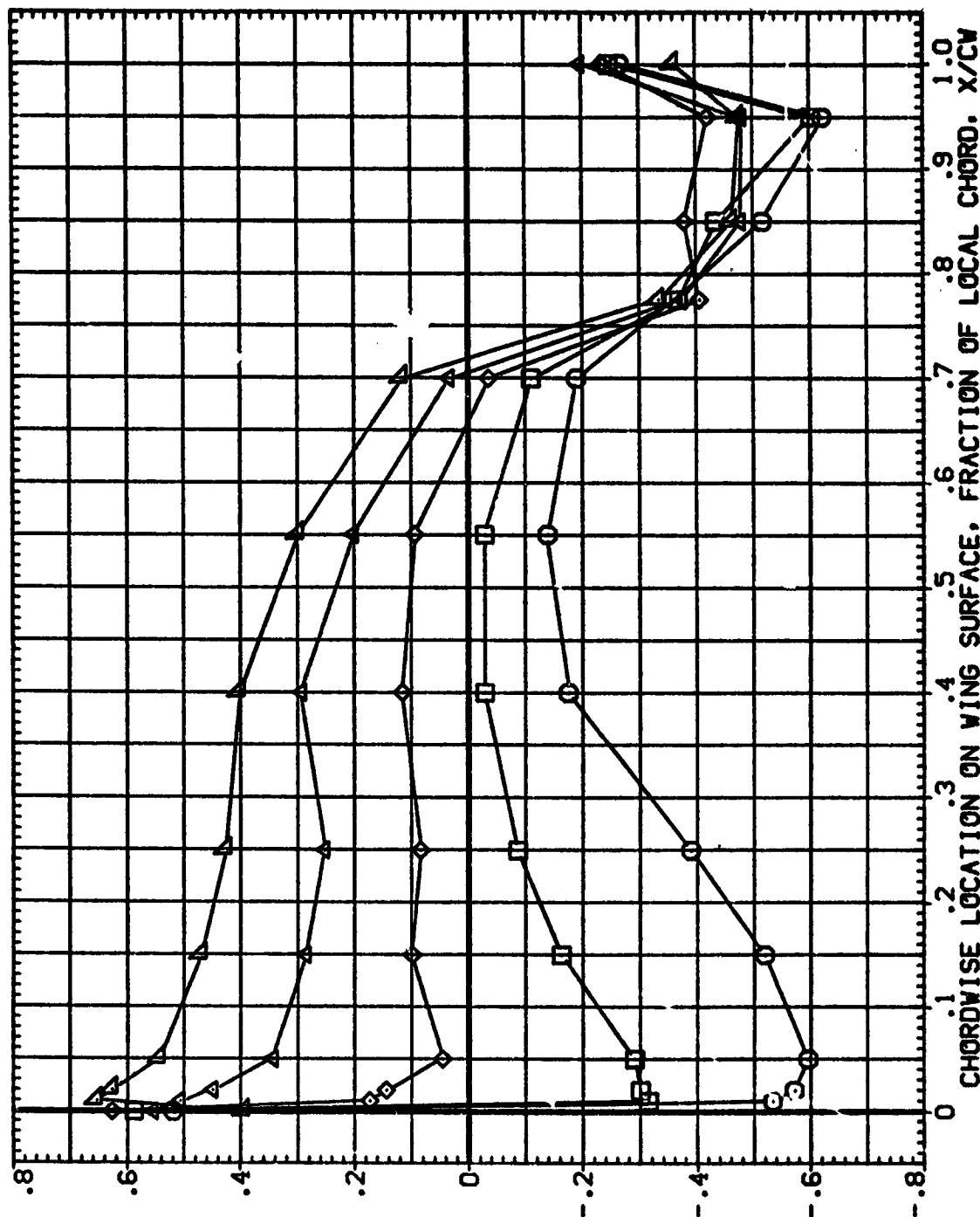


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(OA148) -140A/B/C ORB LEFT WING BOT(1E8L72)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .887
 BETA .000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRBK
 16.300 L-ELVN
 -10.000 MACH
 1.250

55.000
 -10.000
 1.250

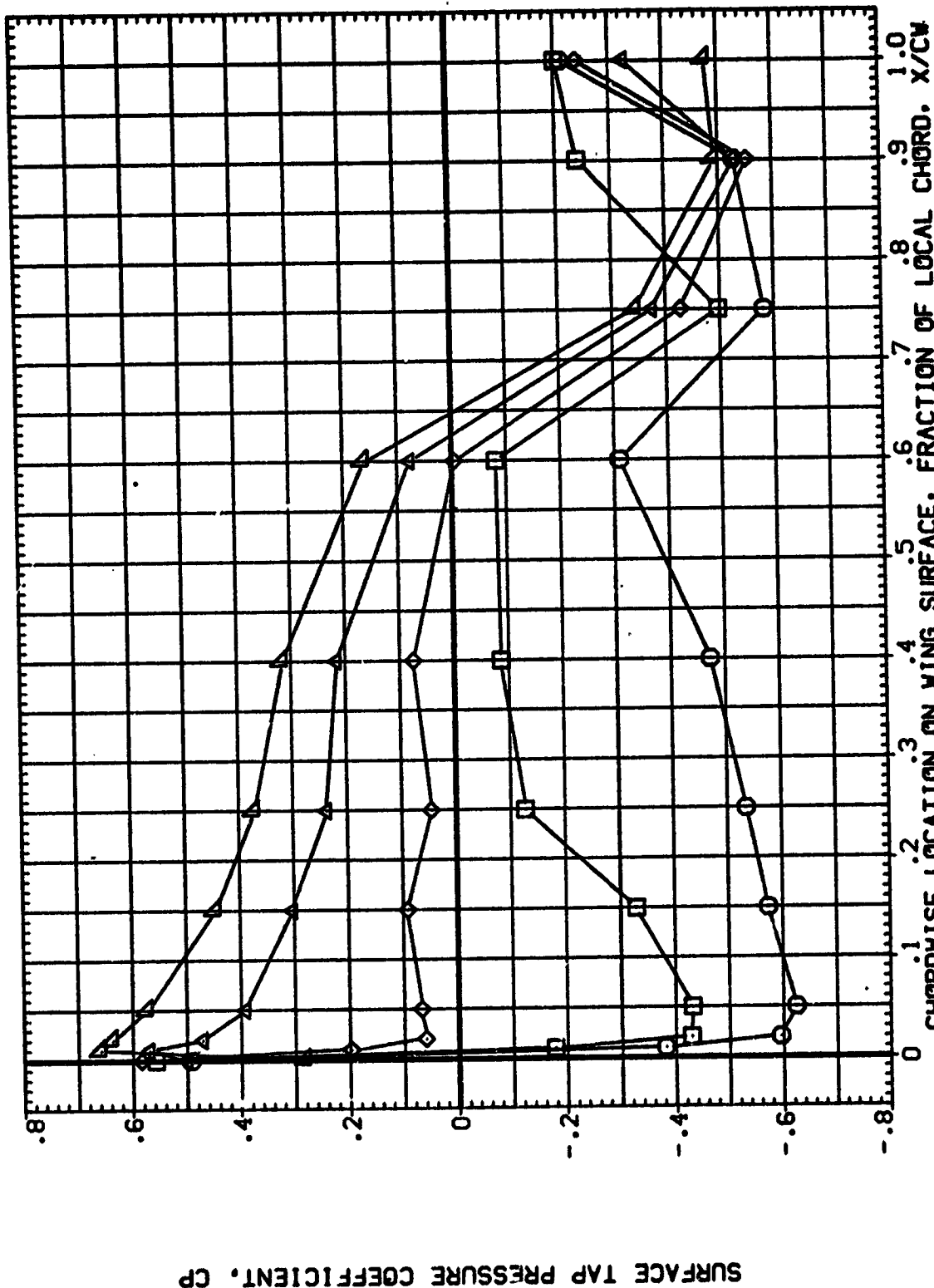


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L72)

SYMBOL
 ▽
 ◇
 □
 ○
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .972

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BDFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 1.250

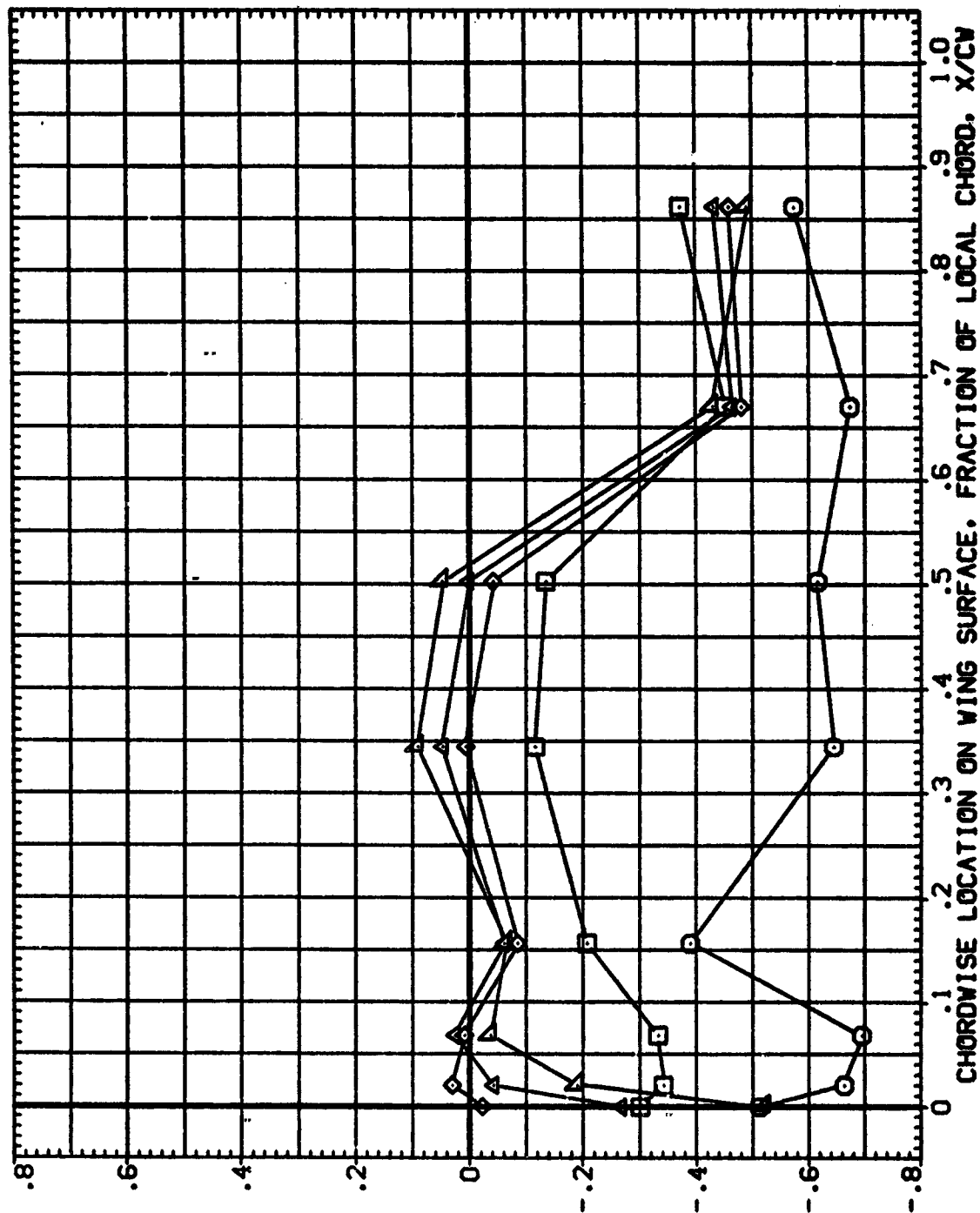


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

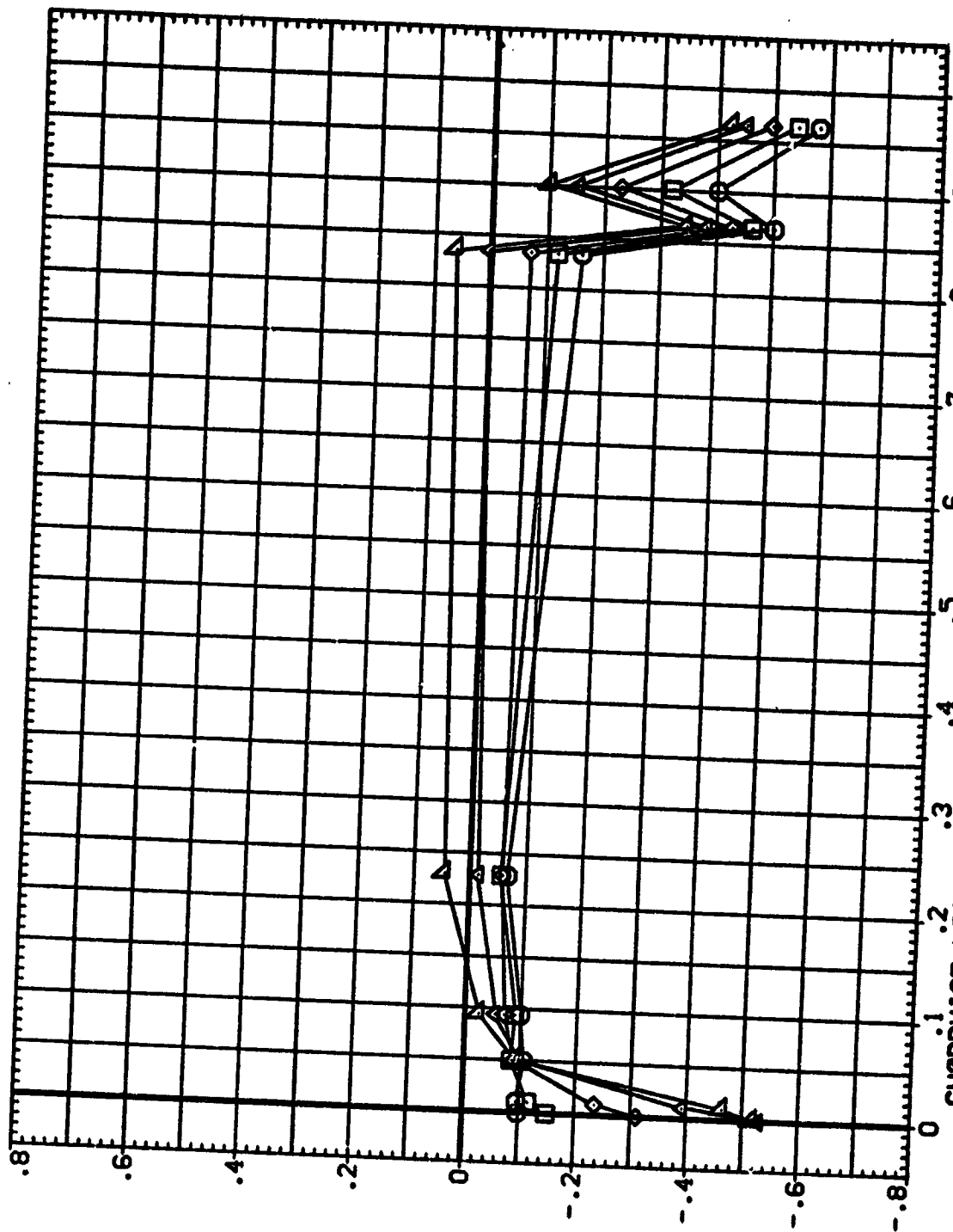
AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L72)

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BV BETA
 .299 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPOBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	ALPHA	2Y/BV	BETA	...	RUDDER	PARAMETRIC VALUES
□	-4.000	.427	4.000		BOFLAP	-5.000 SPOBRK 55.000
◇	.000				R-ELVN	16.300 L-ELVN -10.000
△	4.000					-10.000 MACH 1.250
▽	8.000					
▽	12.000					

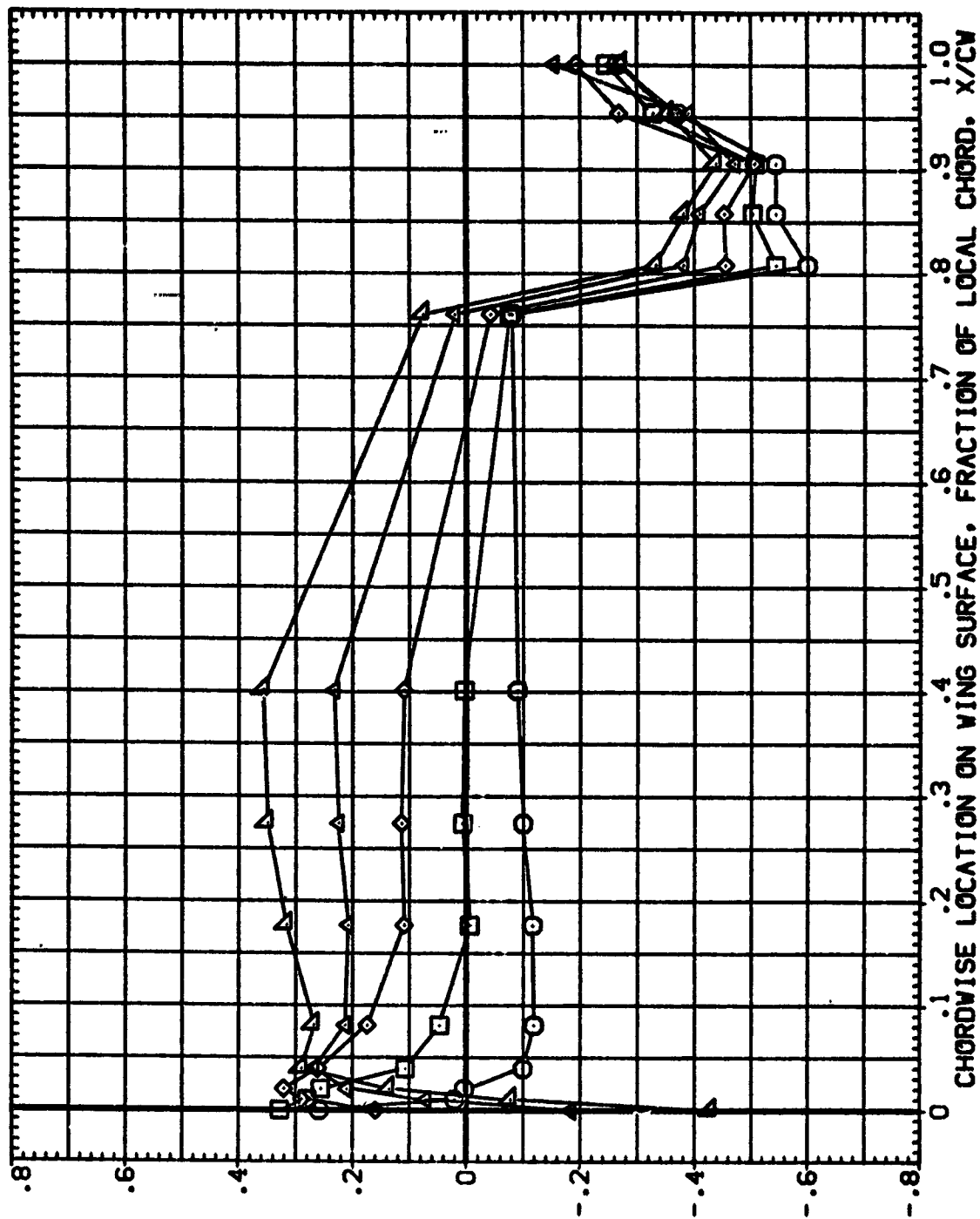


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L72)

SYMBOL	ALPHA	Z1/BV	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRBK	L-ELVN	MACH
▽	-4.000	.673	4.000				-5.000			93.000
◇	.000						16.300			-10.000
□	4.000						-10.000			1.250
○	8.000									
△	12.000									

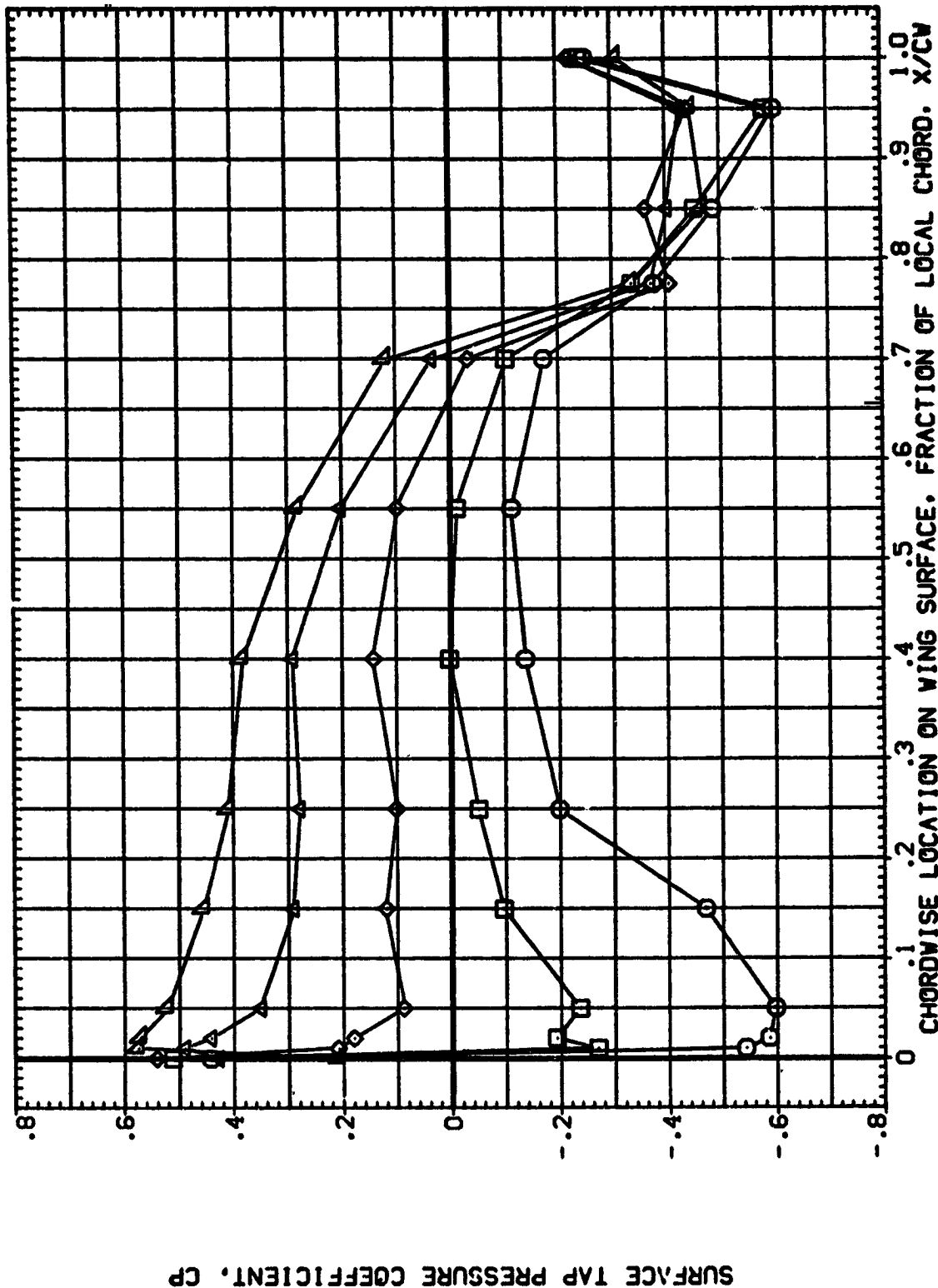


FIG. 10 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z1/BV BETA
 .887 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

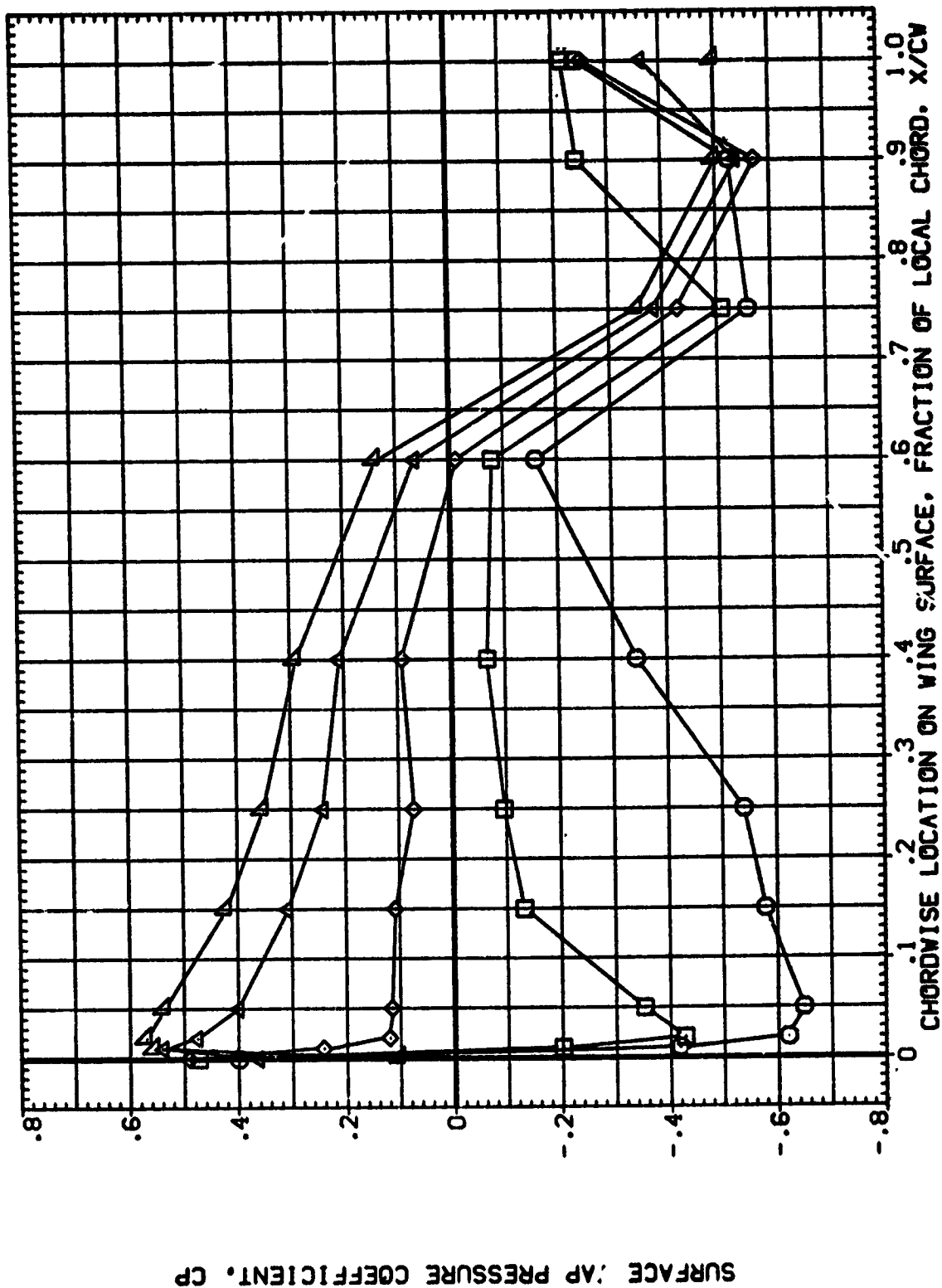


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L72)

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BW
 .972

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRNK
 L-ELVN
 MACH

55.000
 -10.000
 1.250

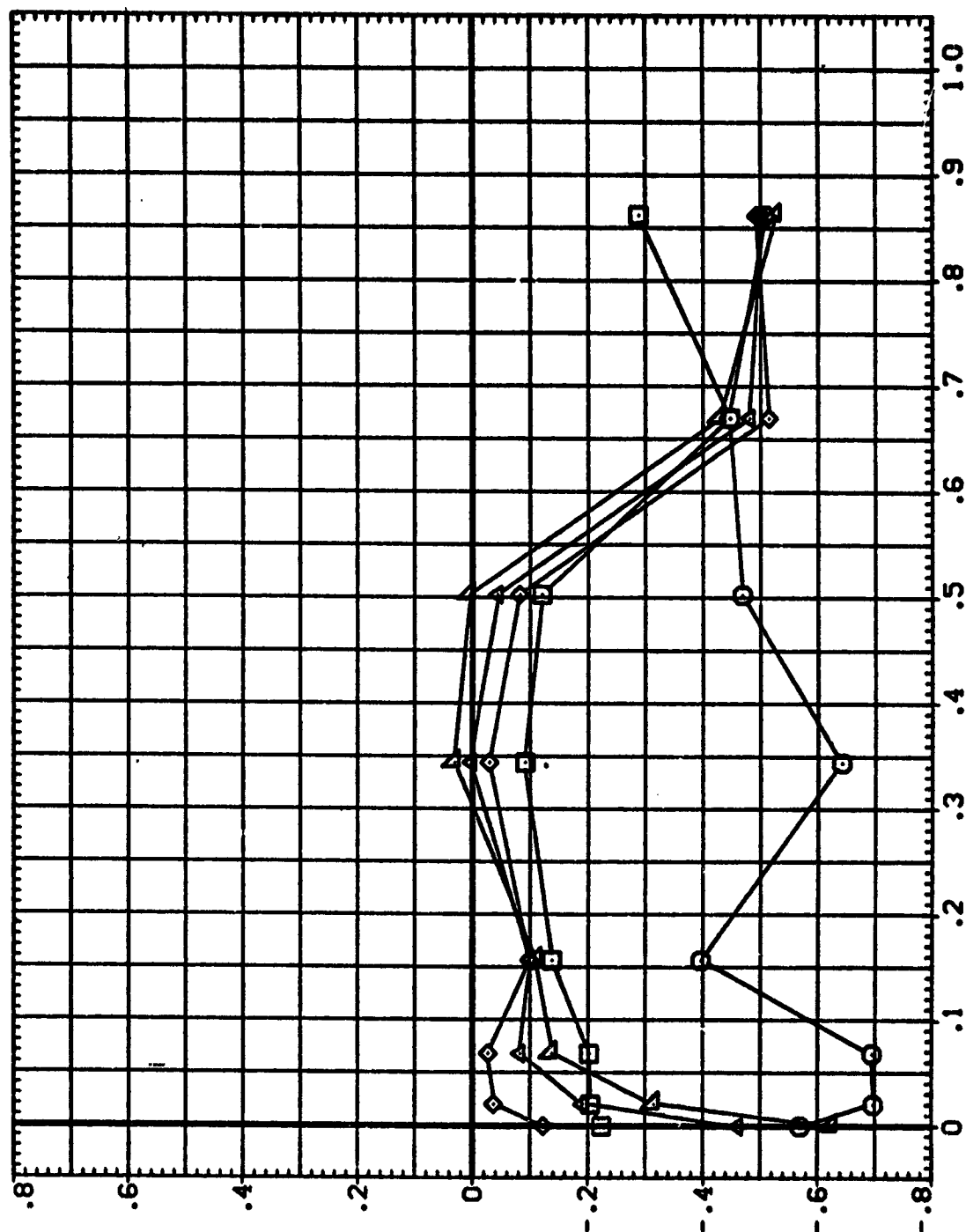


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 □ ◇ △ ▽ ▿

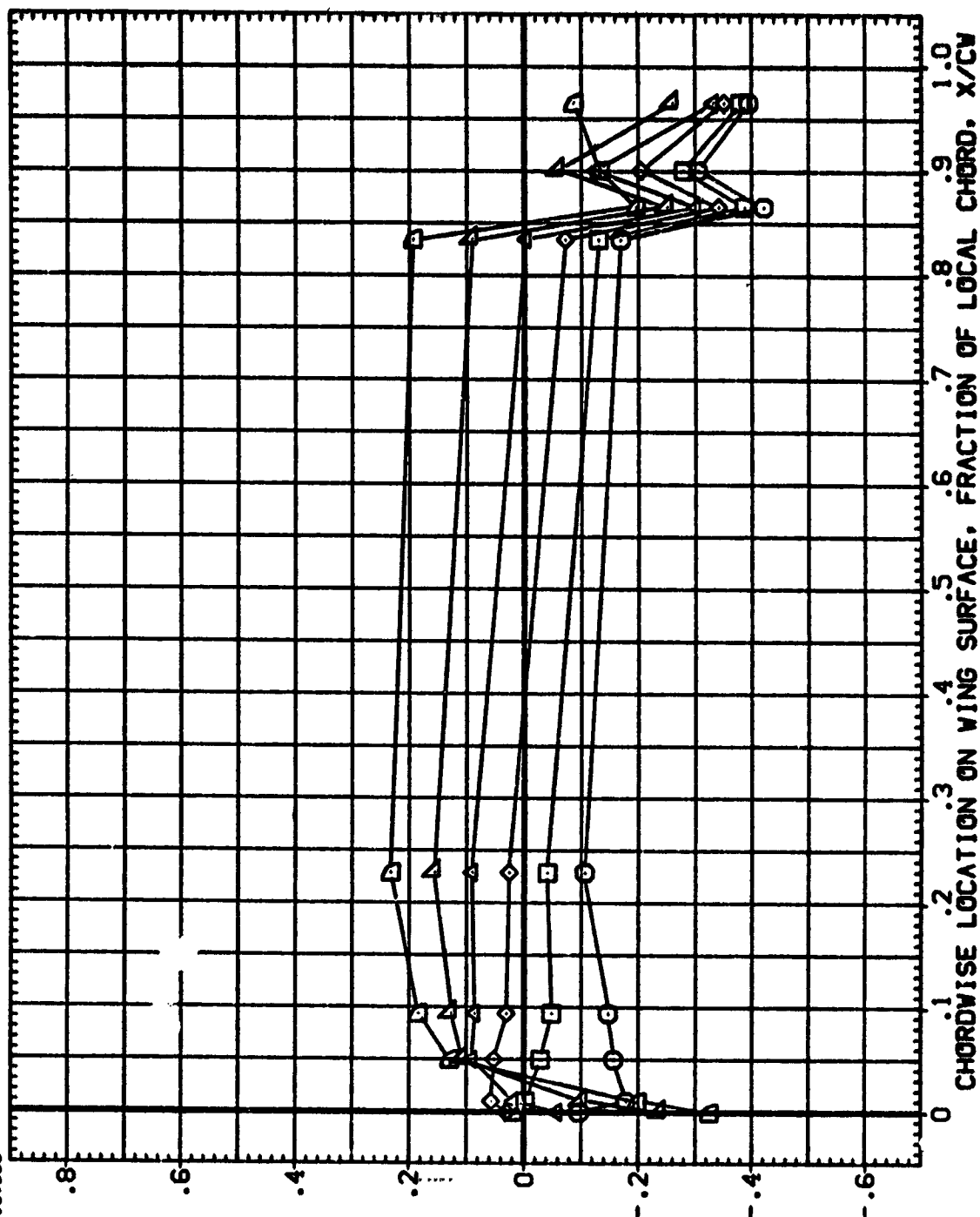
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BV .299
 BETA -4.000

RUDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRK
 16.300 L-ELVN
 -10.000 MACH

59.000
 -10.000
 1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L71)

SYMBOL
 ▽ ▴ ◆ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

ZY/BN BETA
 .427 -4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPEED 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.400

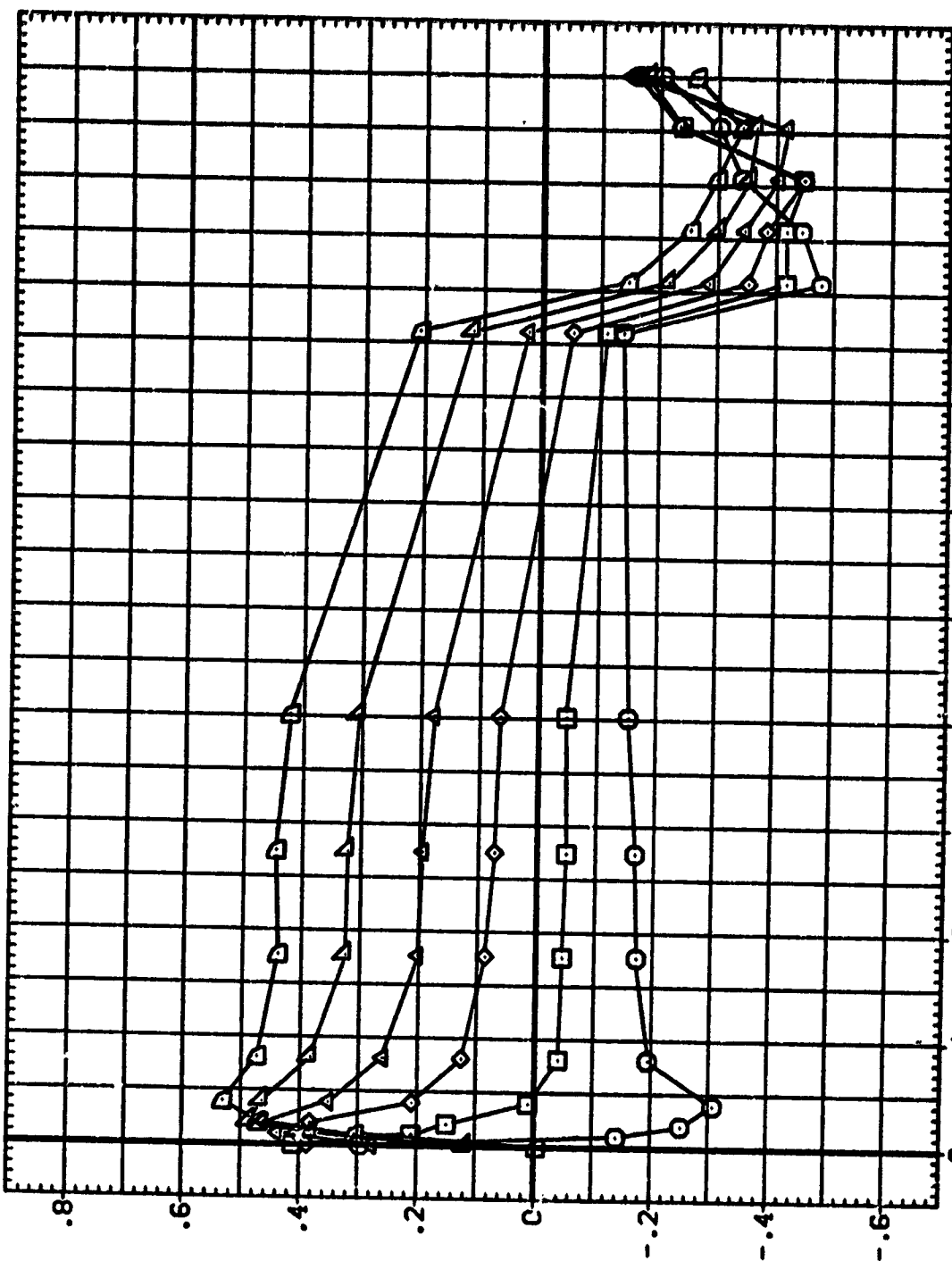


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES
 CHORDWISE LOCATION ON WING SURFACE. FRACTION OF LOCAL CHORD. X/CW

AMES 11-073(0A148) -140A/B/C OF J LEFT WING BOT (IE8L71)

PARAMETRIC VALUES
 RUDDER -3.000 SPEED 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.400

ALPHA 21/BN BETA
 -4.000 .673 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ △ ▽ ▹ ▸

SURFACE TAP PRESSURE COEFFICIENT, CP

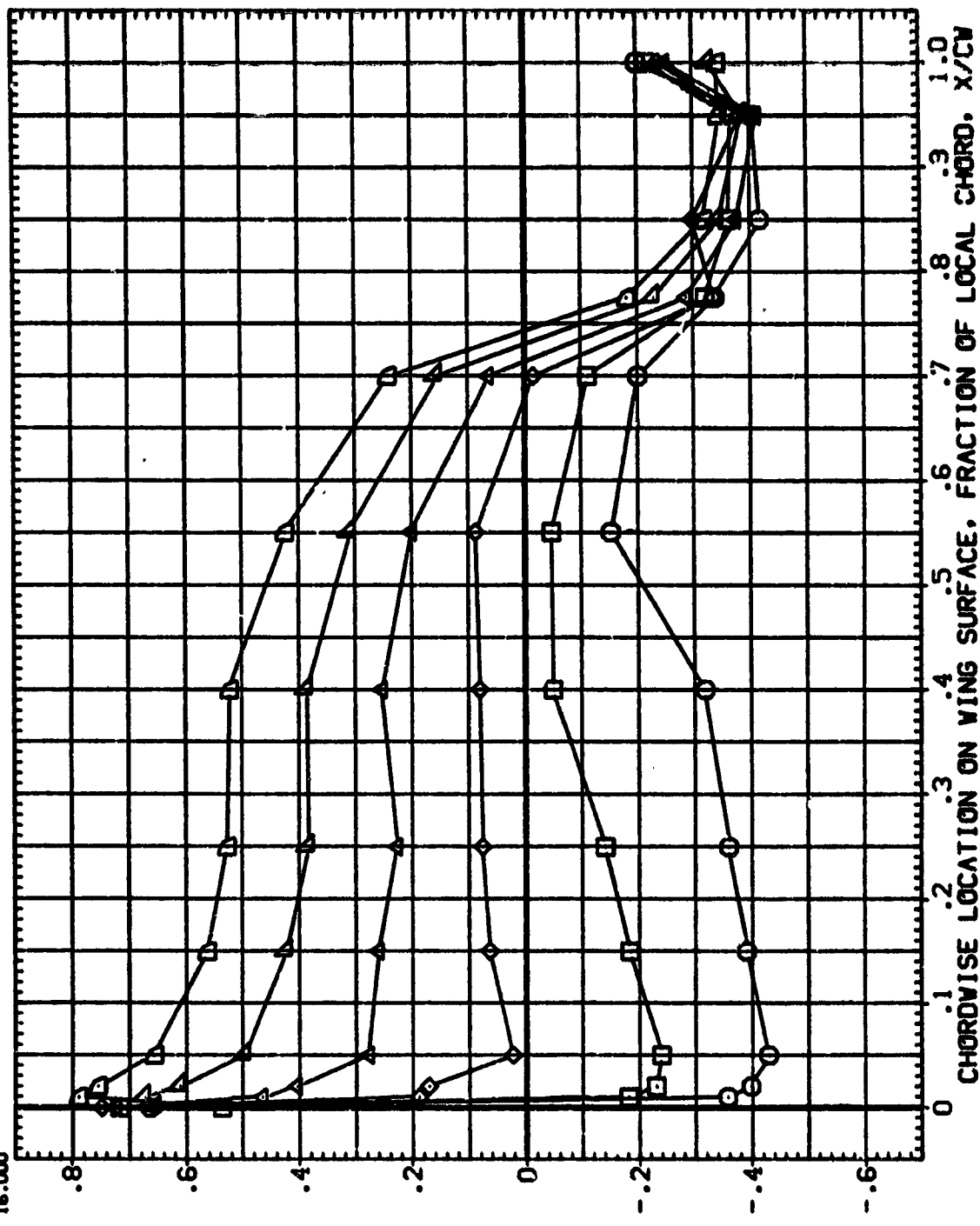


FIG. 10 LEFT WING BOTTOM SURFACE ELEVEN DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L71)

ALPHA	ZI/BN	BETA	PARAMETRIC VALUES
-4.000	.887	-4.000	RUDER
.000			BOFLAP
4.000			R-ELVN
8.000			SPDRY
12.000			L-ELVN
16.000			MACH
			55.000
			-10.000
			1.400

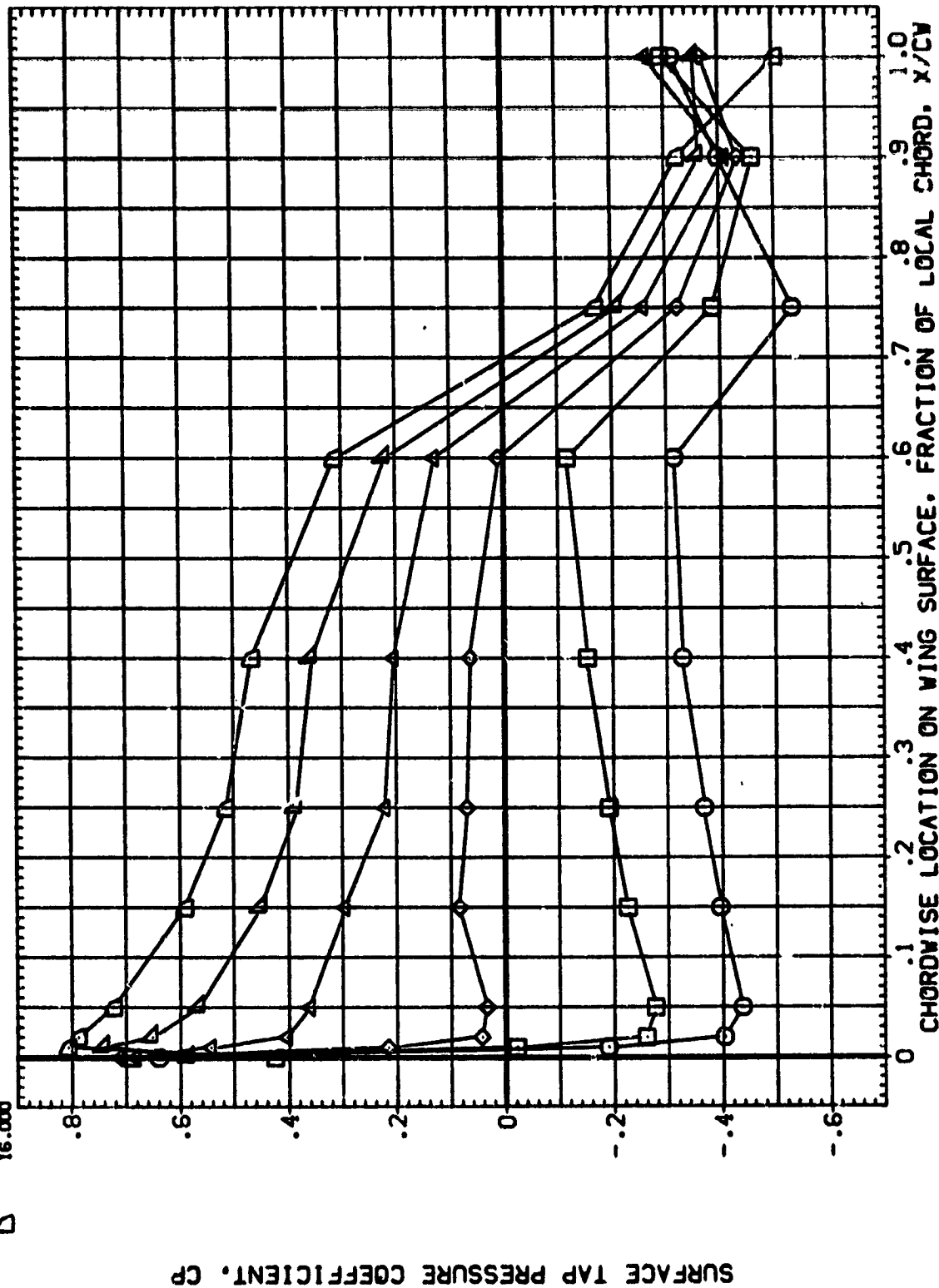


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽ ▴ ◊ □ ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/8V .972

BETA -4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDBRK 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.400

SURFACE TAP PRESSURE COEFFICIENT, CP

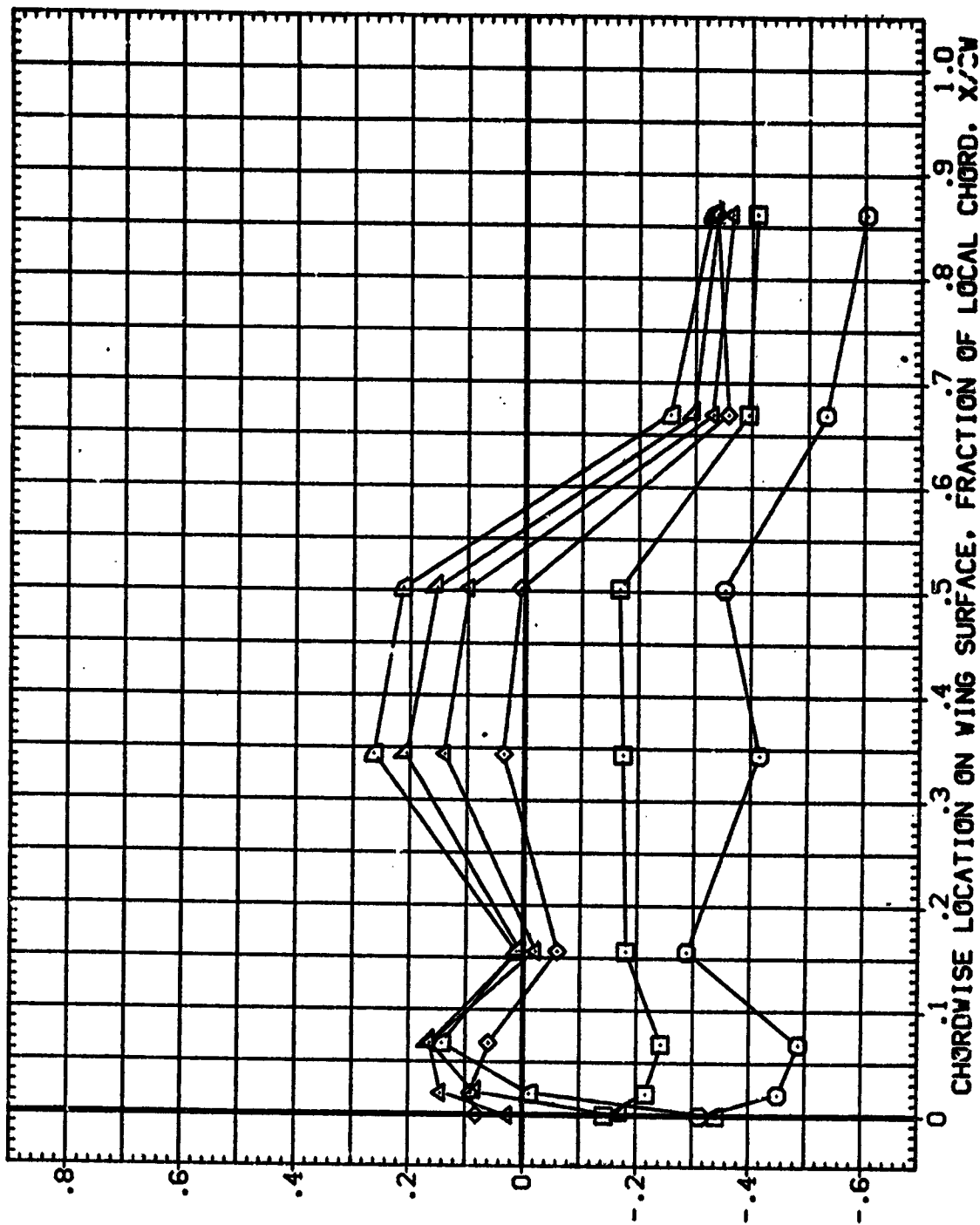


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L71)

SYMBOL	ALPHA	2V/BV	BETA	PARAMETRIC VALUES
□	-4.000	.299	.000	RUDDER
◇	.000			BOFLAP
△	4.000			R-ELVN
▽	8.000			
▽	12.000			
▽	16.000			
				SPDRK
				L-ELVN
				MACH
				55.000
				-10.000
				1.400

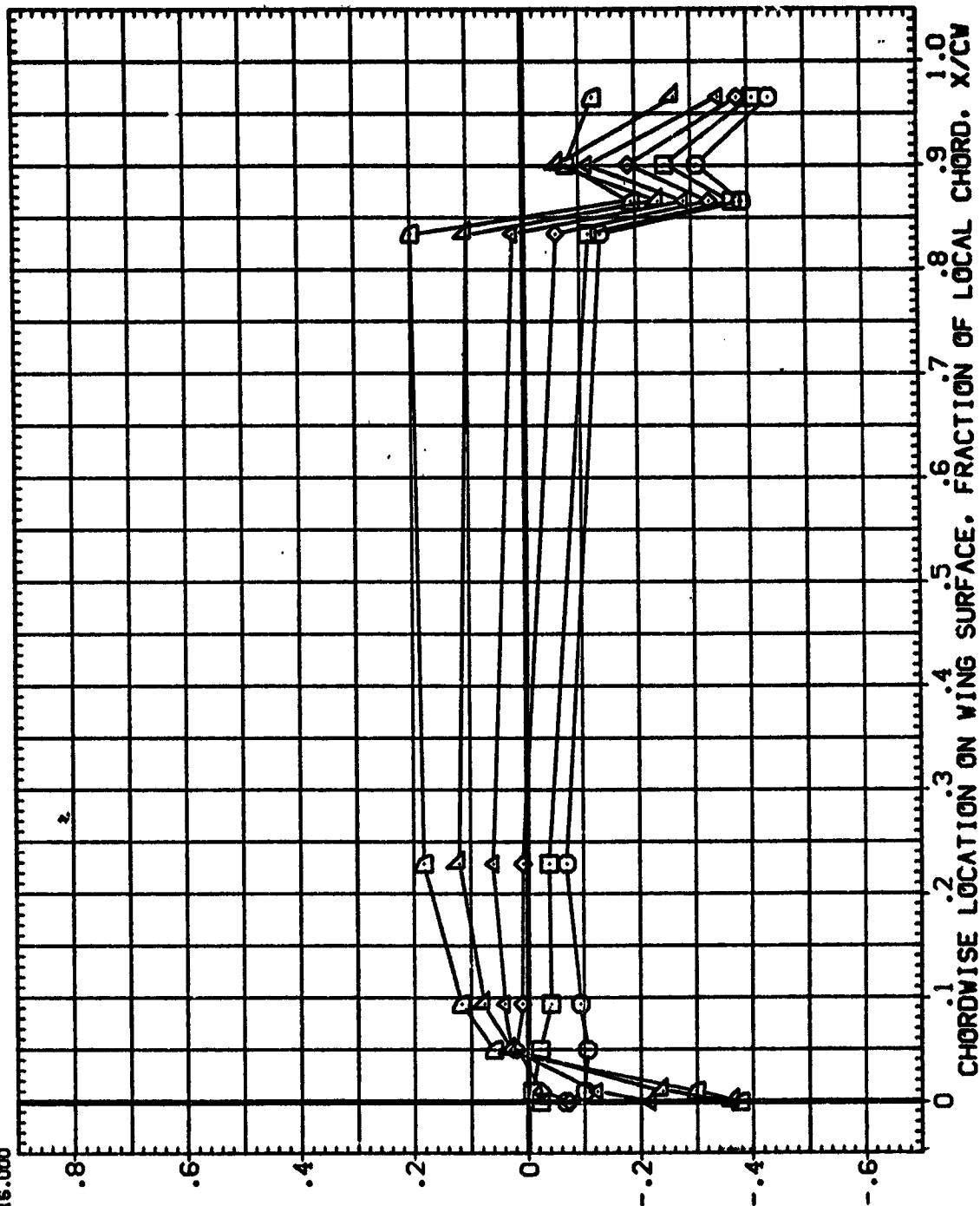


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L71)

SYMBOL
 □
 ◇
 △
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

21/BN
 .427

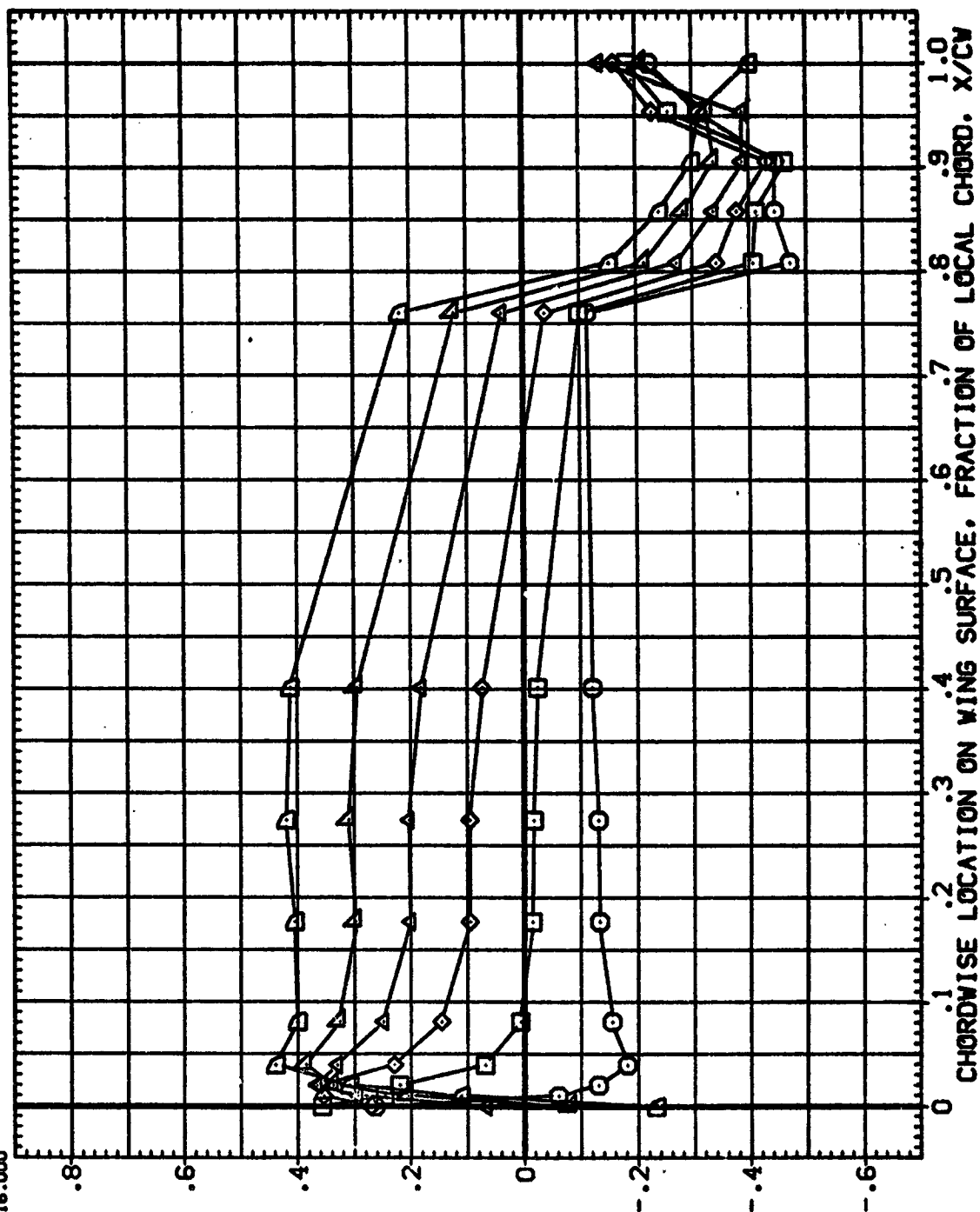
BETA
 .000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L71)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
□	-4.000	.673	.000	RUDDER
◇	.000			BOFLAP
△	4.000			R-ELVN
▽	8.000			L-ELVN
▽	12.000			MACH
▽	16.000			

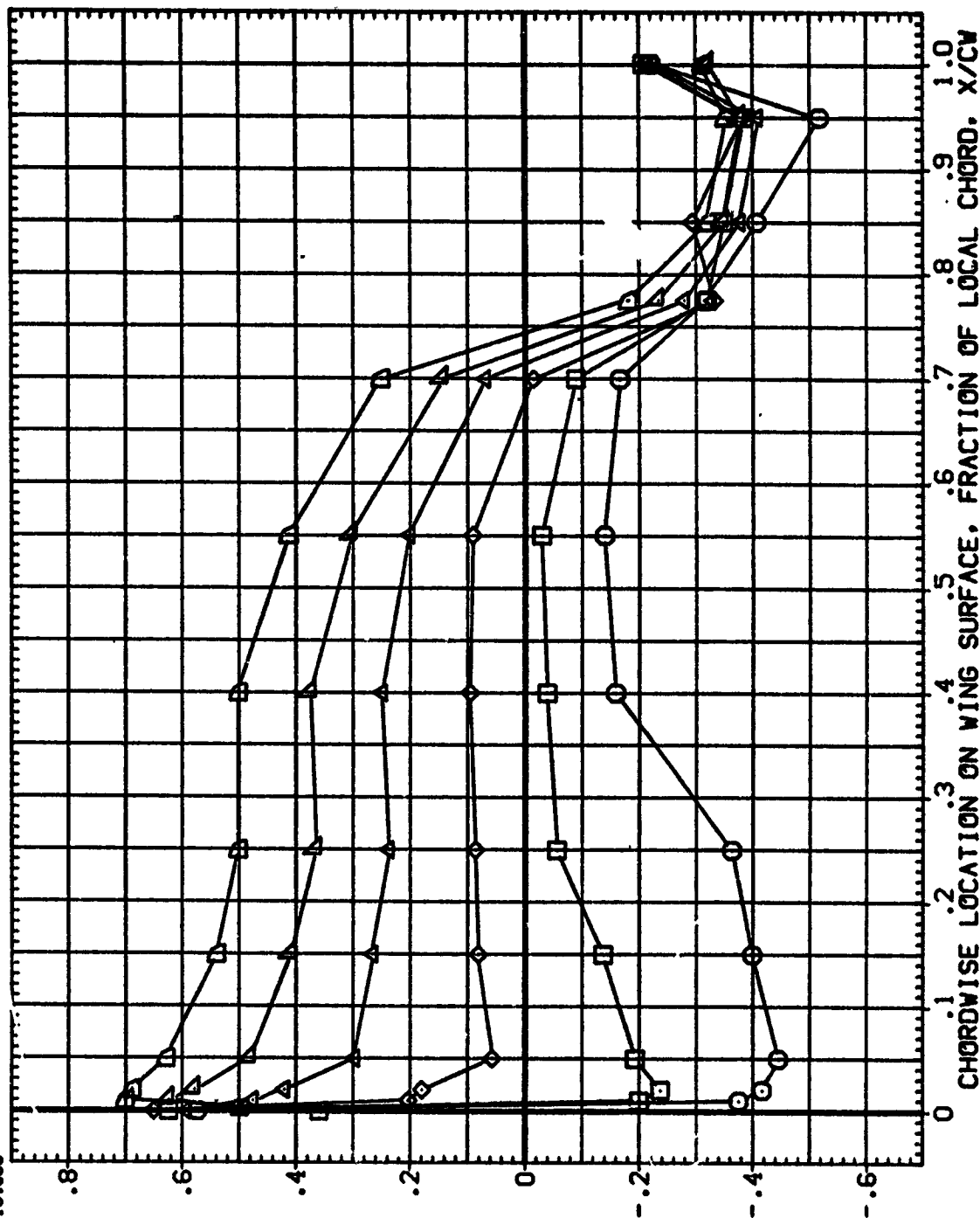


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(OA148) -140A/B/C ORB LEFT WING BOT(IE8L71)

PARAMETRIC VALUES
 RUDDER -5.000 SPORRK
 BOFLAP 16.300 L-ELVN
 R-ELVN -10.000 MACH 1.400

ALPHA 2Y/8V BETA
 -4.000 .887 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ▽ ▴ ◆ □ ○

SURFACE TAP PRESSURE COEFFICIENT, CP

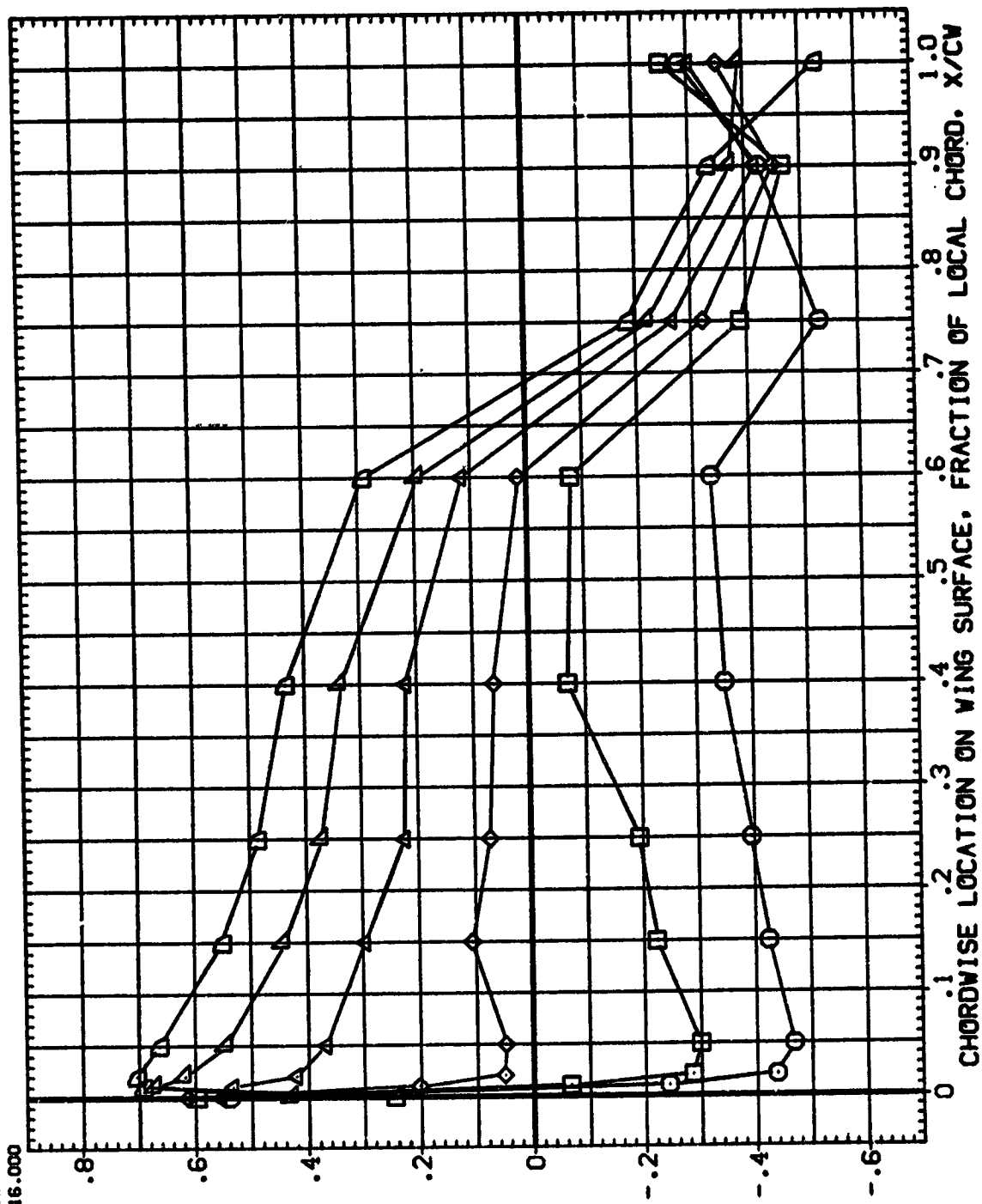


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L71)

SYMBOL
 □ ◇ △ ▽ ▹ ▸

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BN .972

BETA .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPDRBK
 L-ELVN
 MACH
 55.000
 -10.000
 1.400

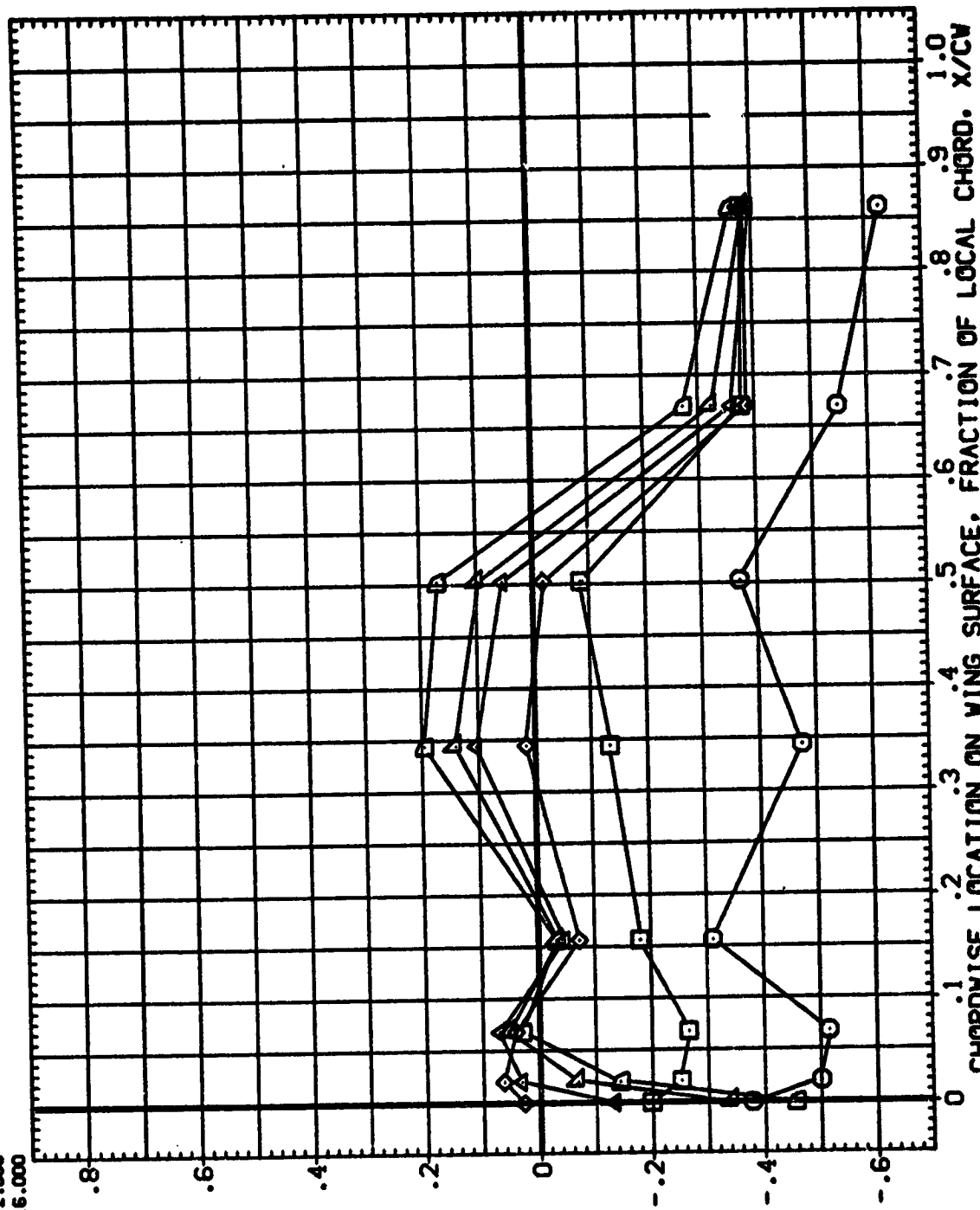


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(IE8L71)

SYMBOL
 □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/8V
 .299

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRBK
 L-ELVN
 MACH

55.000
 -10.000
 1.400

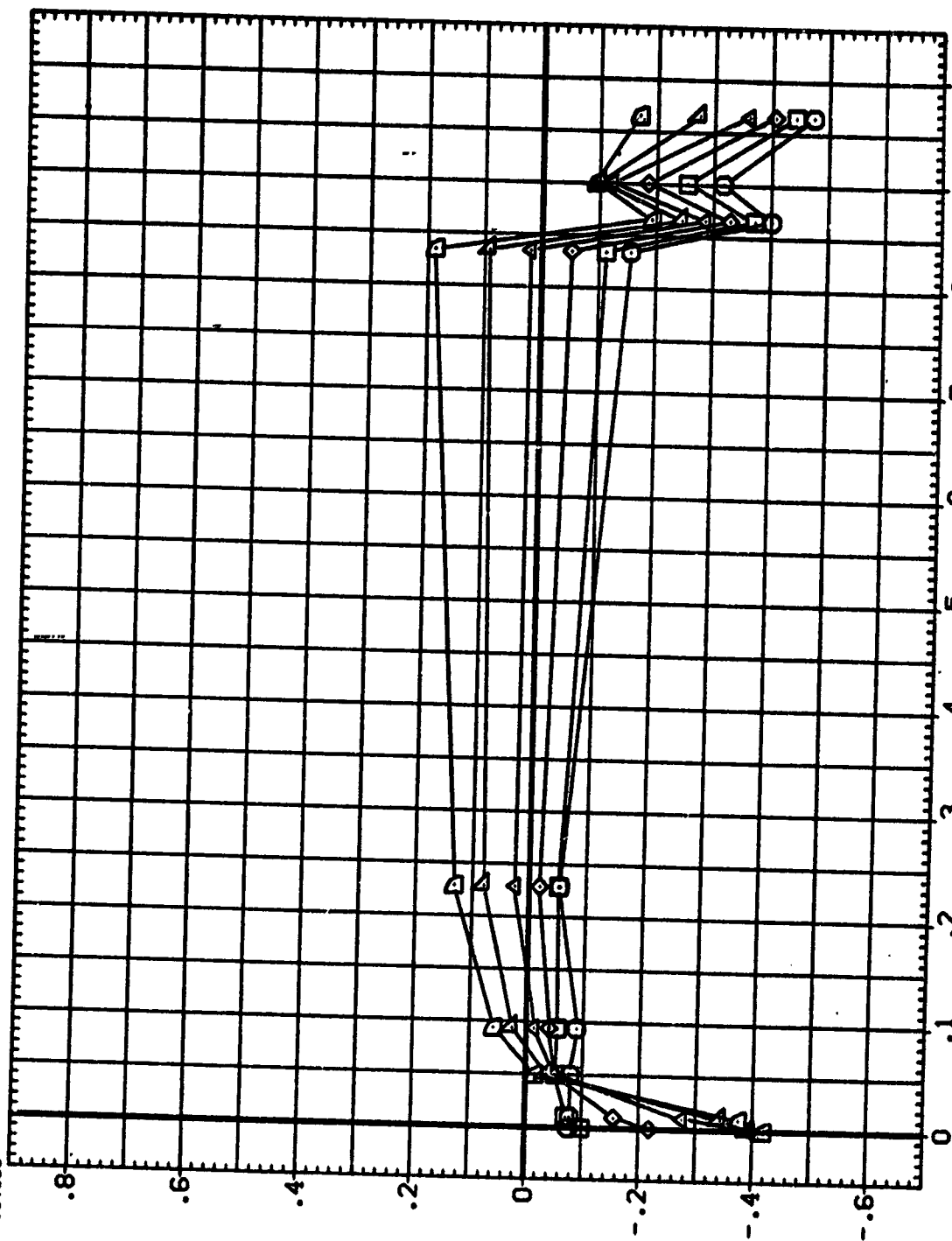


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L71)

SYMBOL

ALPHA

2Y/BN BETA

PARAMETRIC VALUES

RUDER
80FLAP
R-ELVN

-5.000
16.300
-10.000

SFOARK
L-ELVN
NACH

55.000
-10.000
1.400

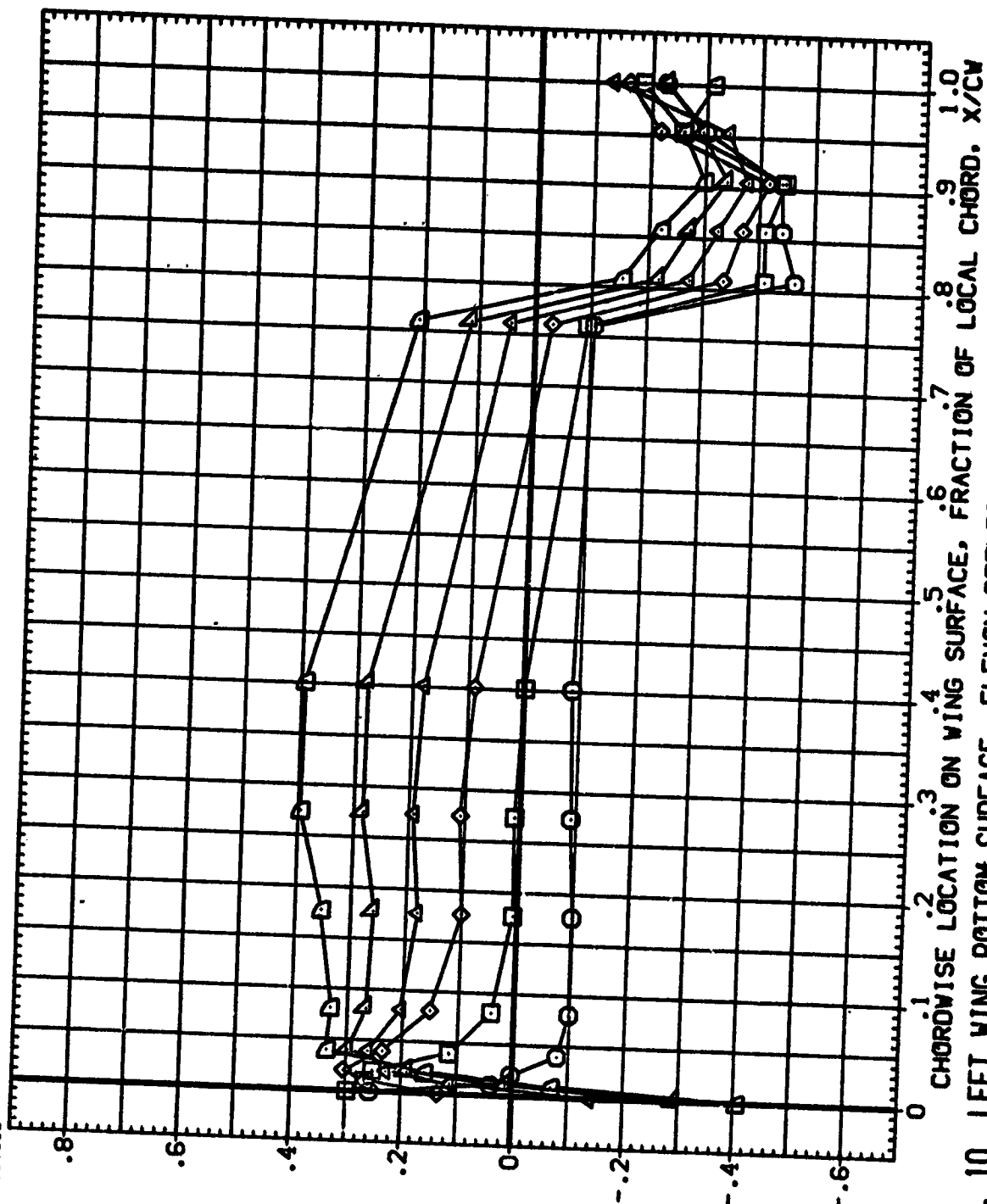


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ▴
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

ZY/BN
 .673

BETA
 4.000

PARAMETRIC VALUES

RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDBRK
 L-ELVN
 MACH
 55.000
 -10.000
 1.400

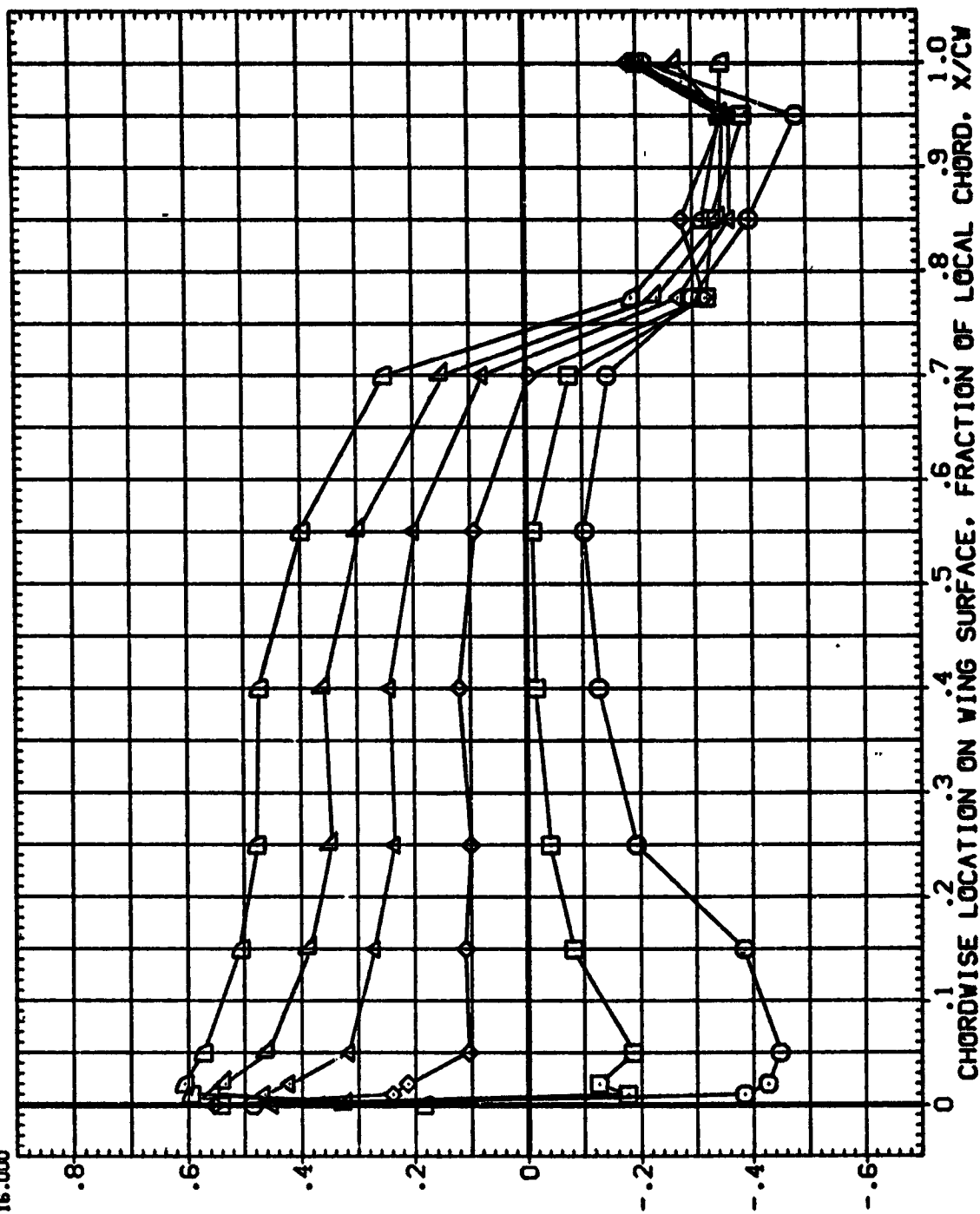


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING BOT(1E8L71)

SYMBOL
 ▽
 ▴
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

ZY/BN BETA
 .987 4.000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRK 55.000
 16.300 L-ELVN -10.000
 -10.000 MACH 1.400

SURFACE TAP PRESSURE COEFFICIENT, CP

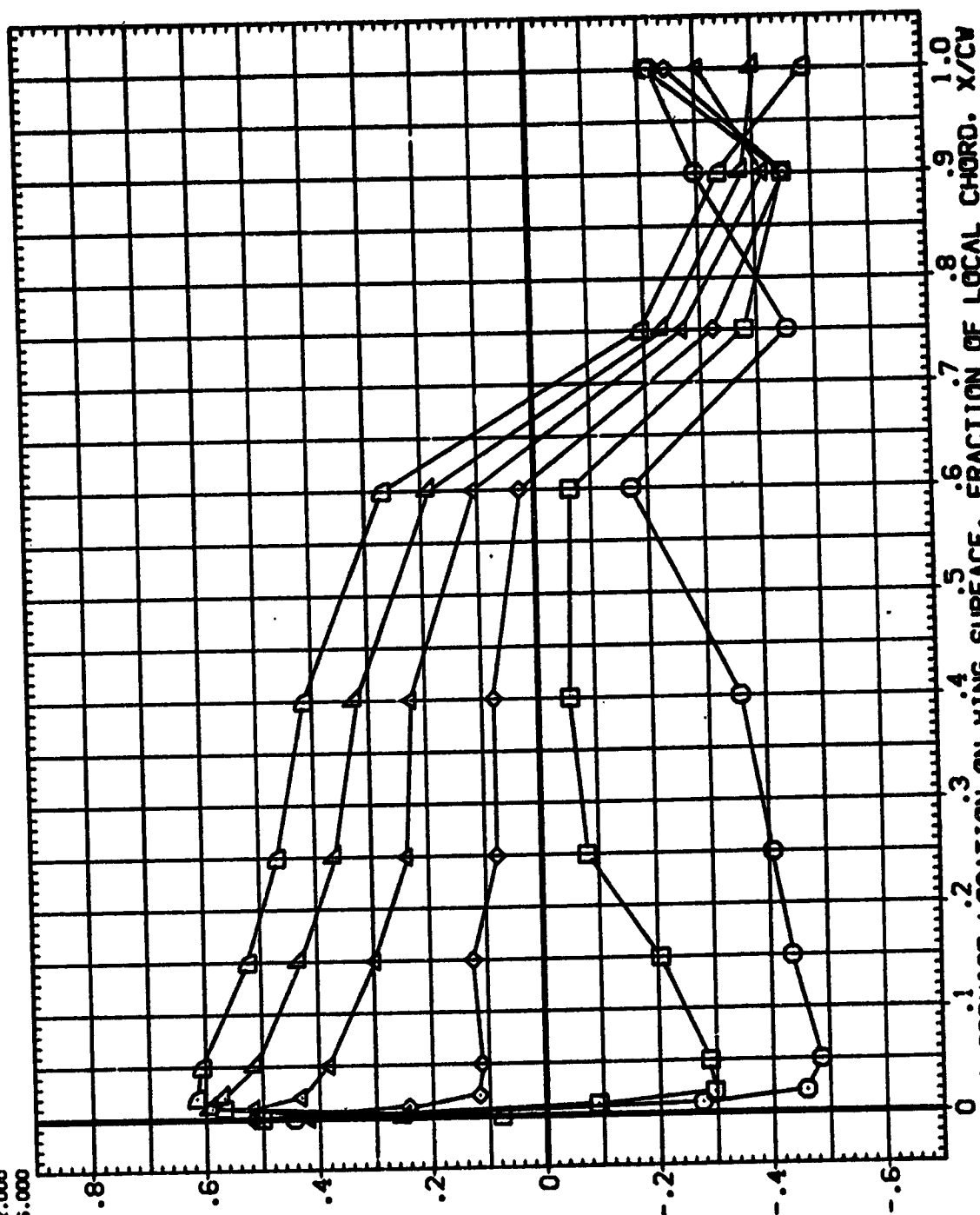


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A118) -140A/B/C ORB LEFT WING BOT(1E8L71)

SYMBOL
 ▽ ▴ ◊ ◻ ◻ ◻

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

ZY/BN BETA
 .972 4.000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPOBRK
 16.300 L-ELVN
 -10.000 MACH
 55.000
 -10.000
 1.400

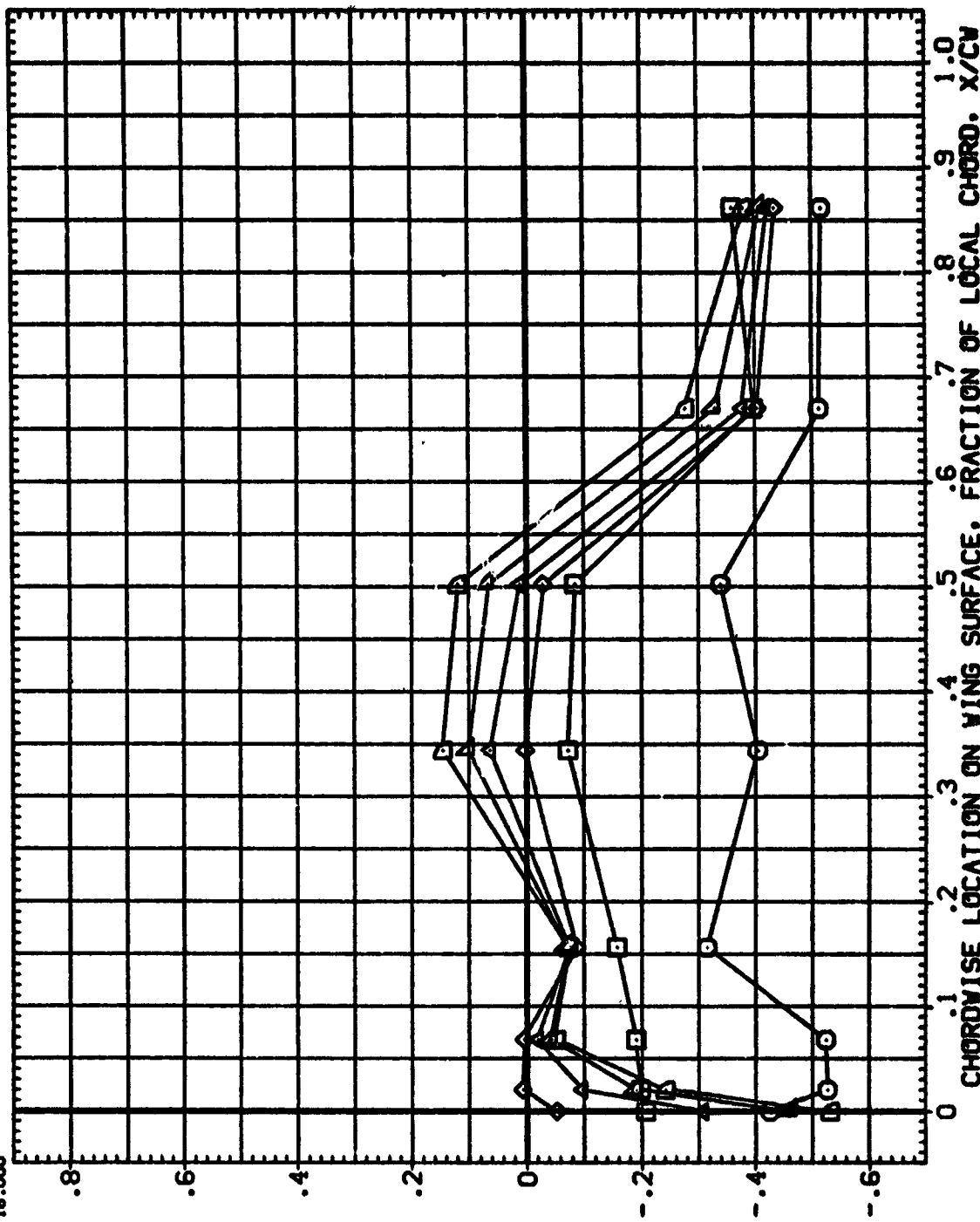


FIG. 10 LEFT WING BOTTOM SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z1/BV
 .299

BETA
 -8.000

PARAMETRIC VALUES

RUDDER
 BOFLAP
 R-ELVN

.000
 16.300
 .000

L-ELVN
 NACH

55.000
 .000
 .600

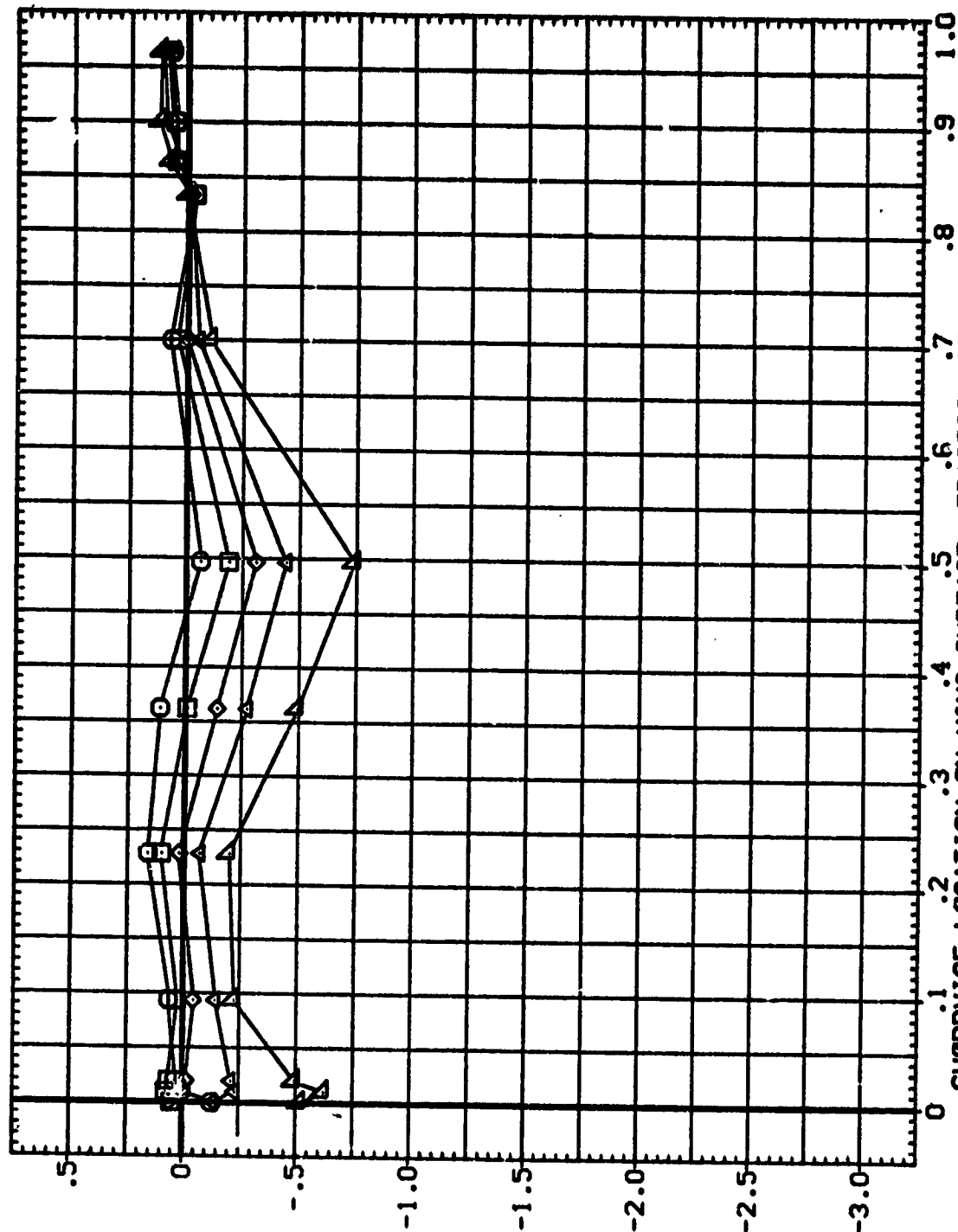


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB LEFT WING TOP(IE8U05)

SYMBOL
 ∇
 \diamond
 \square
 \circ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .427

BETA
 -8.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .500

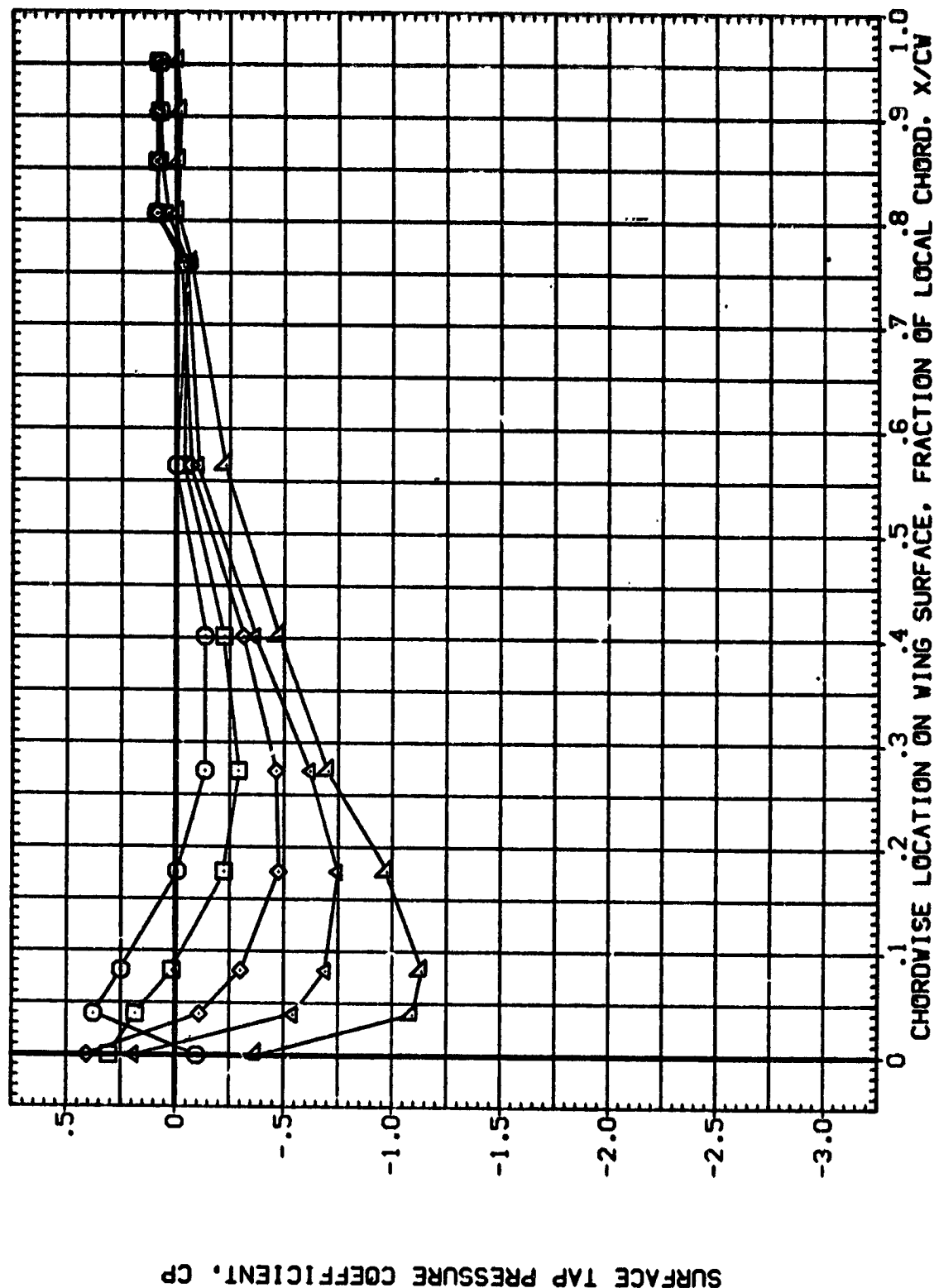


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V .573

BETA -8.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

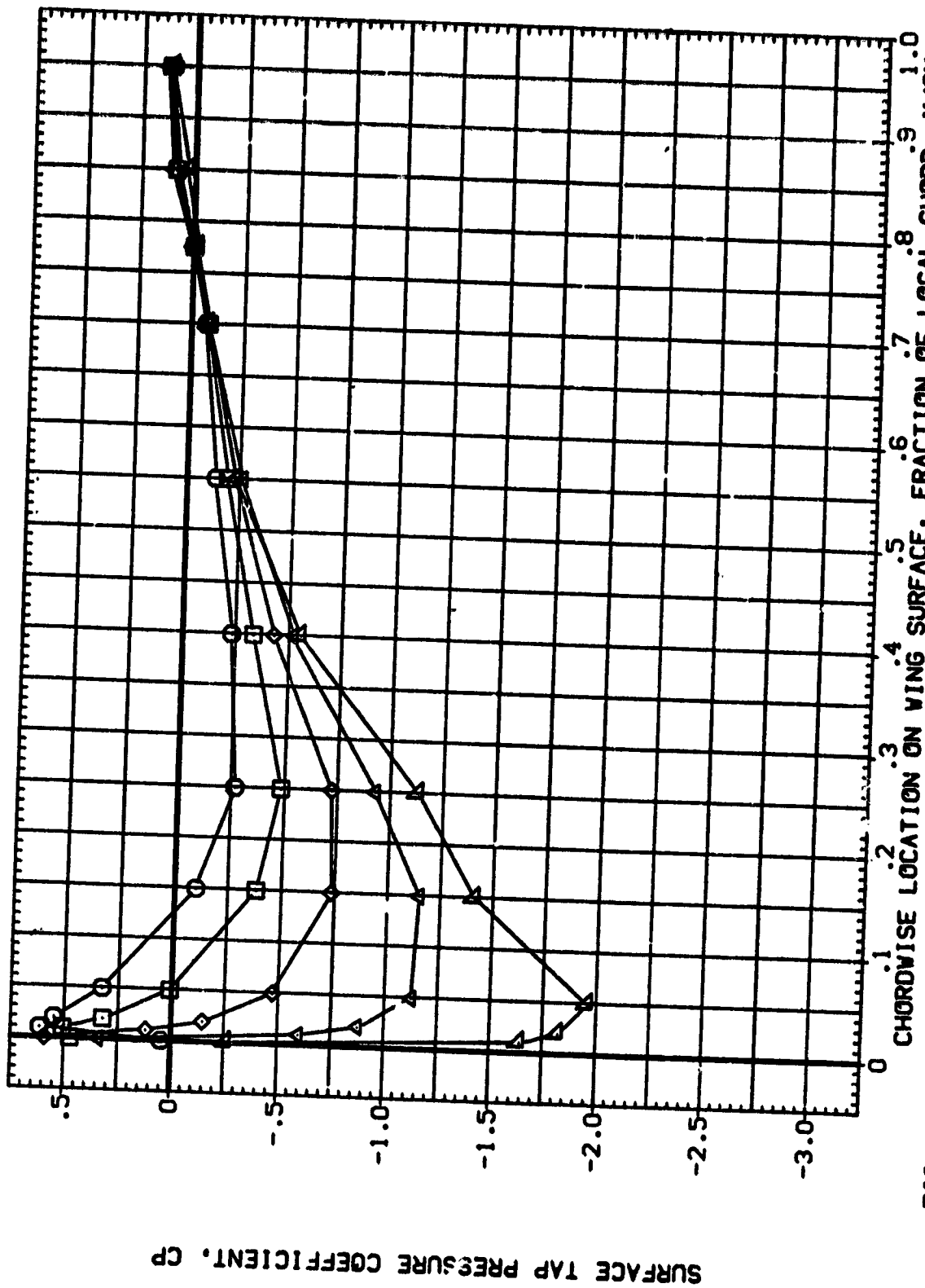


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

PARAMETRIC VALUES
 .000 SP0BRK 55.000
 16.300 L-ELVN .000
 .000 R-ELVN .600

RUDDER
 80FLAP
 R-ELVN

ALPHA 2Y/BV BETA
 -4.000 .987 -8.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◆ □ ○ ▴

SURFACE TAP PRESSURE COEFFICIENT, CP

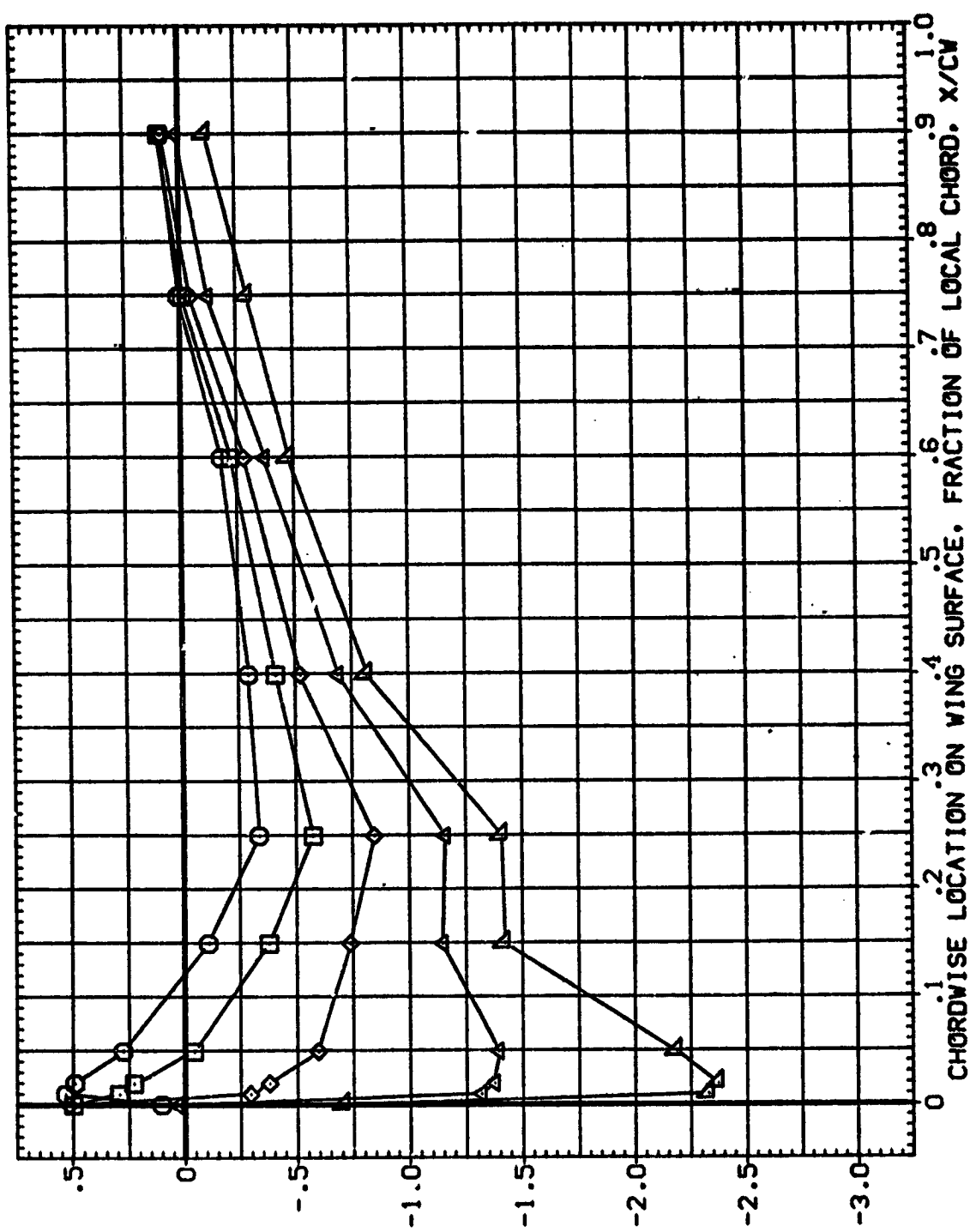


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL	ALPHA	2Y/8N	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.972	-8.000	BOFLAP	.000 SP08RK
◇	.000			R-ELVN	16.300 L-ELVN
△	4.000				.000 MACH
	8.000				.600
	12.000				

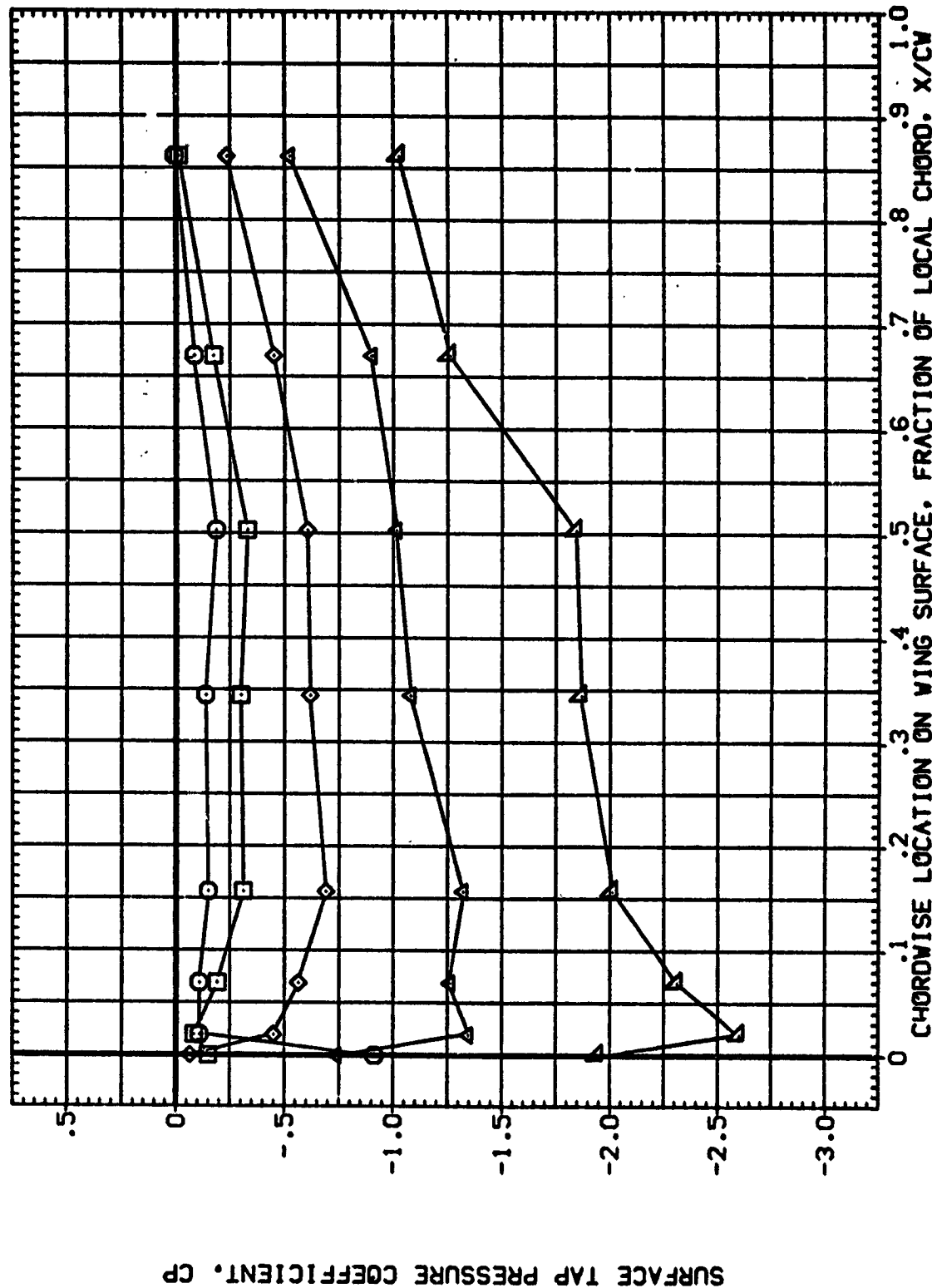


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB LEFT WING TOP(IEQU05)

SYMBOL
 ○
 □
 ◇
 △
 ▽

ALPHA 2V/SW BETA
 -4.000 .299 -4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 .000 SPDRX 55.000
 16.300 L-ELVN .000
 .000 R-ELVN .600

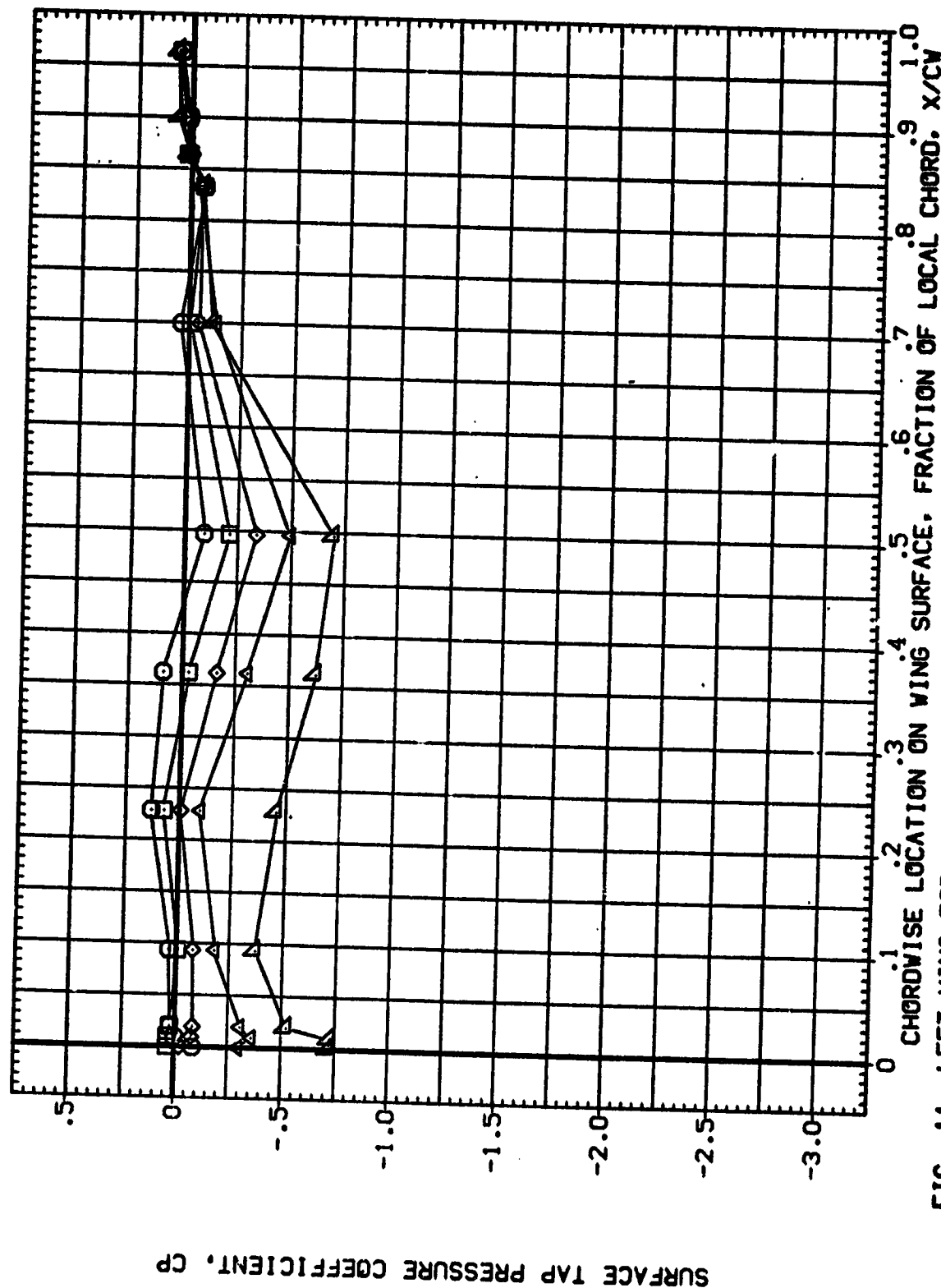


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U05)

SYMBOL	ALPHA		2V/BN		BETA		PARAMETRIC VALUES			
	-4.000	.000	.427	-4.000	16.300	.000	RUDDER	SPDRK	L-ELVN	MACH
▽	4.000	8.000					BDFLAP	.000	.000	.600
◇	12.000						R-ELVN			

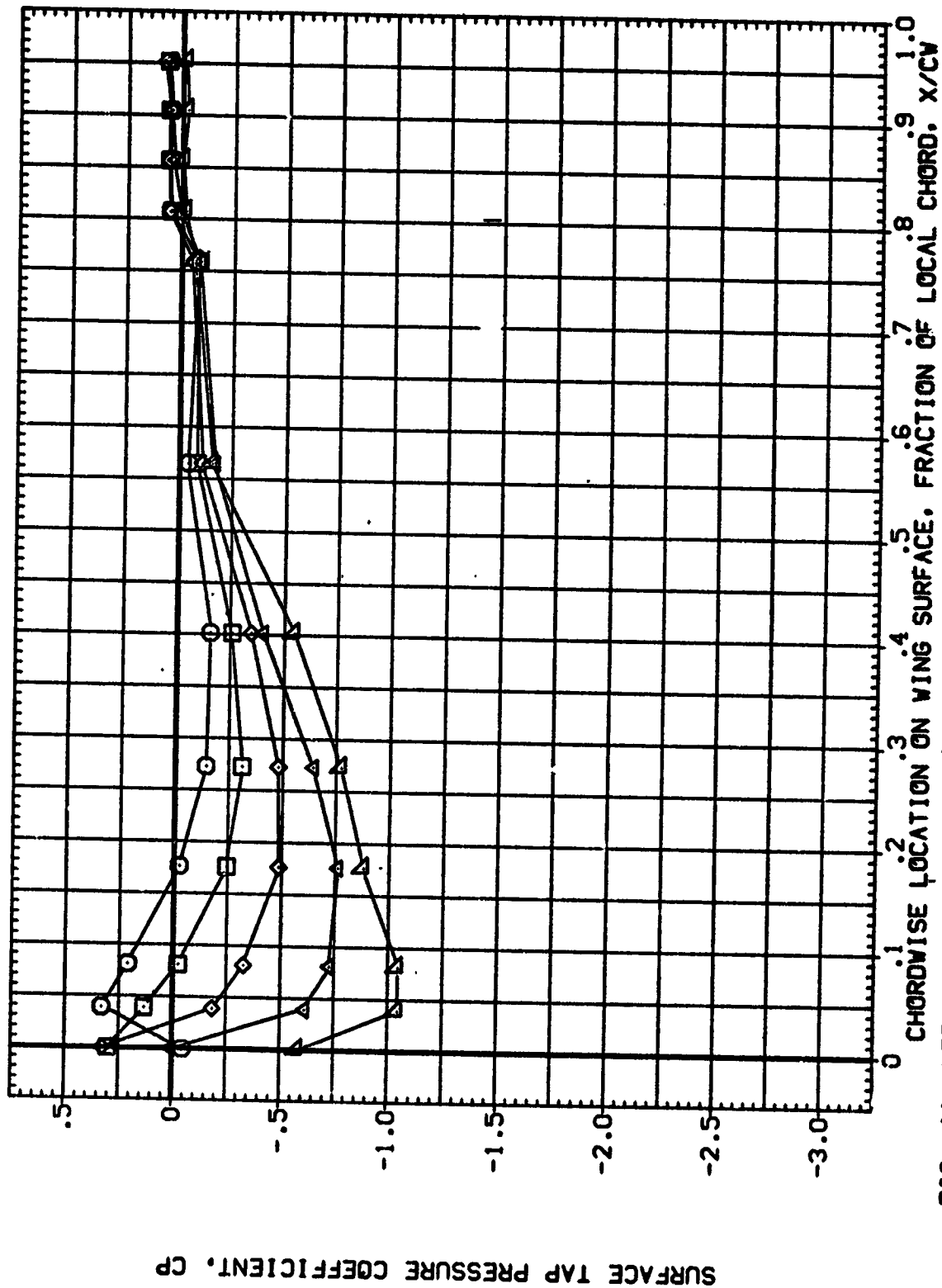


FIG. 11 LEFT WING TOP SURFACE

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL
 7
 4
 3
 2
 1

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .673

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN
 .000
 16.300
 .000
 SPDRK
 L-ELVN
 MACH
 .000
 .000
 .600

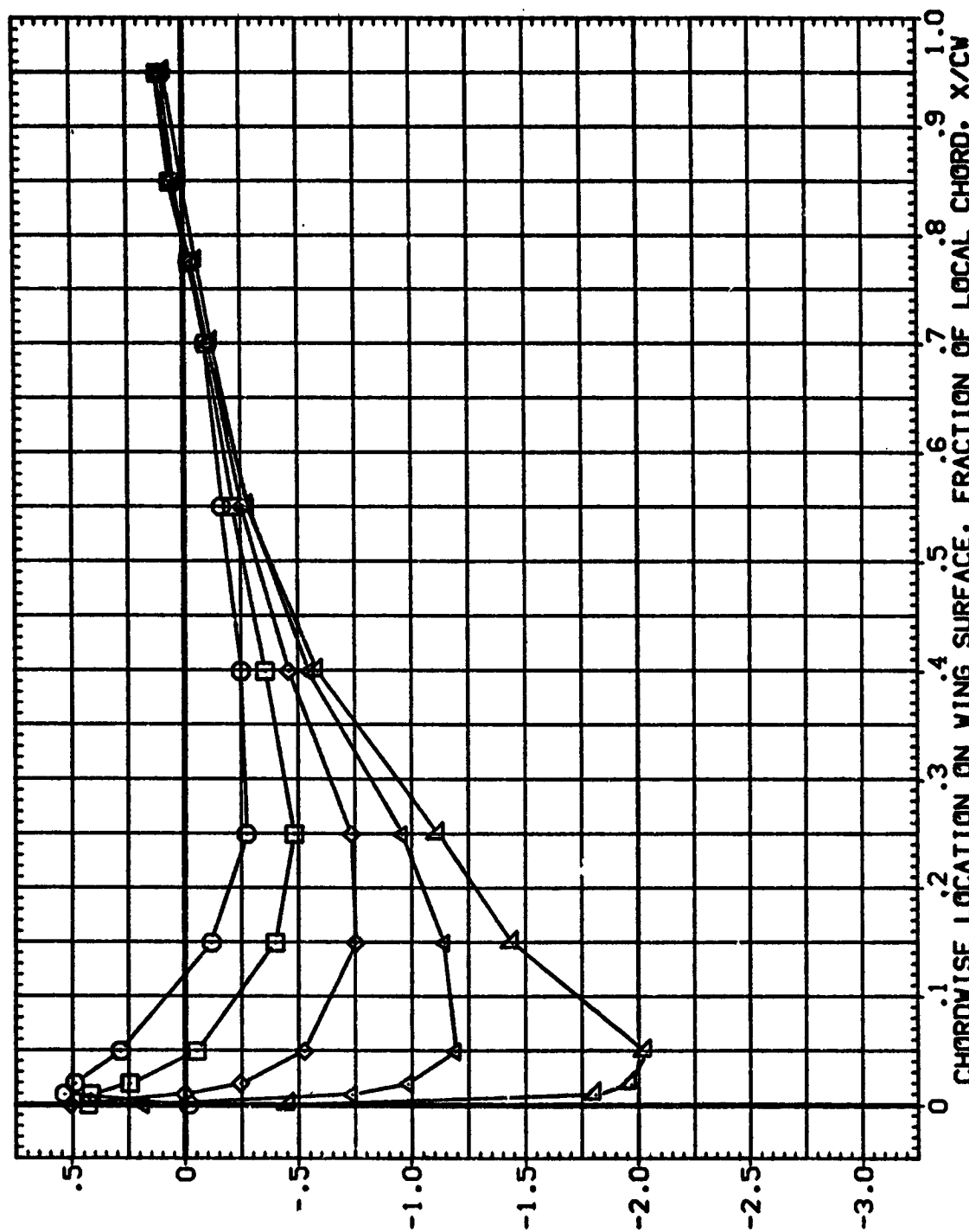


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL	ALPHA	2Y/BN	BETA	RUDER	PARAMETRIC VALUES
○	-4.000	.887	-4.000	90FLAP	.000 SPDRK
□	.000			R-ELVN	16.300 L-ELVN
◇	4.000				.000 MACH
△	8.000				
▽	12.000				
					95.000
					.000
					.600

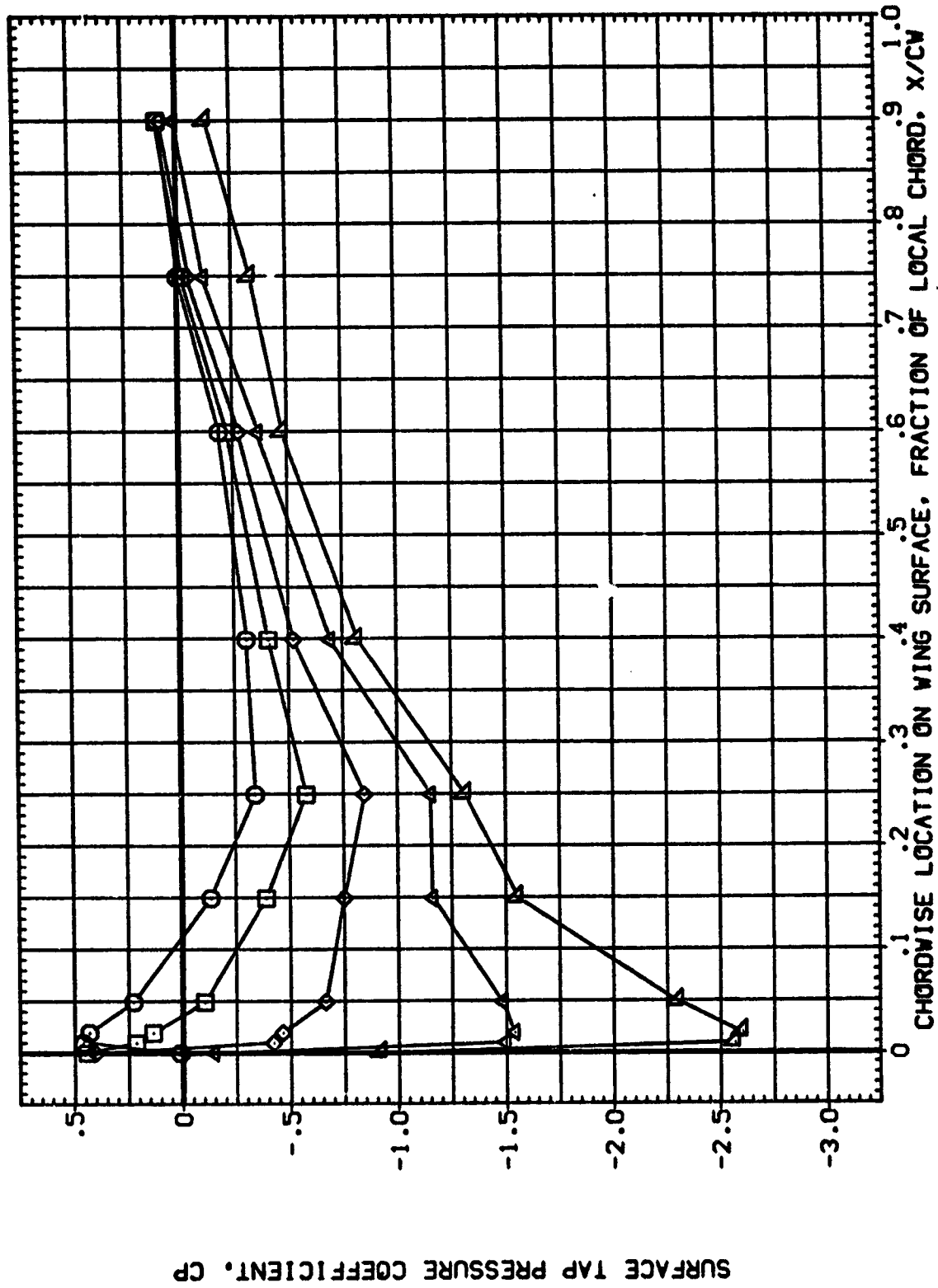


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(OA:48) -140A/B/C/R ORB LEFT WING TOP(IE8U05)

SYMBOL
 ∇ \diamond \square \circ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZI/BI
 .972

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPORRY 55.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .800

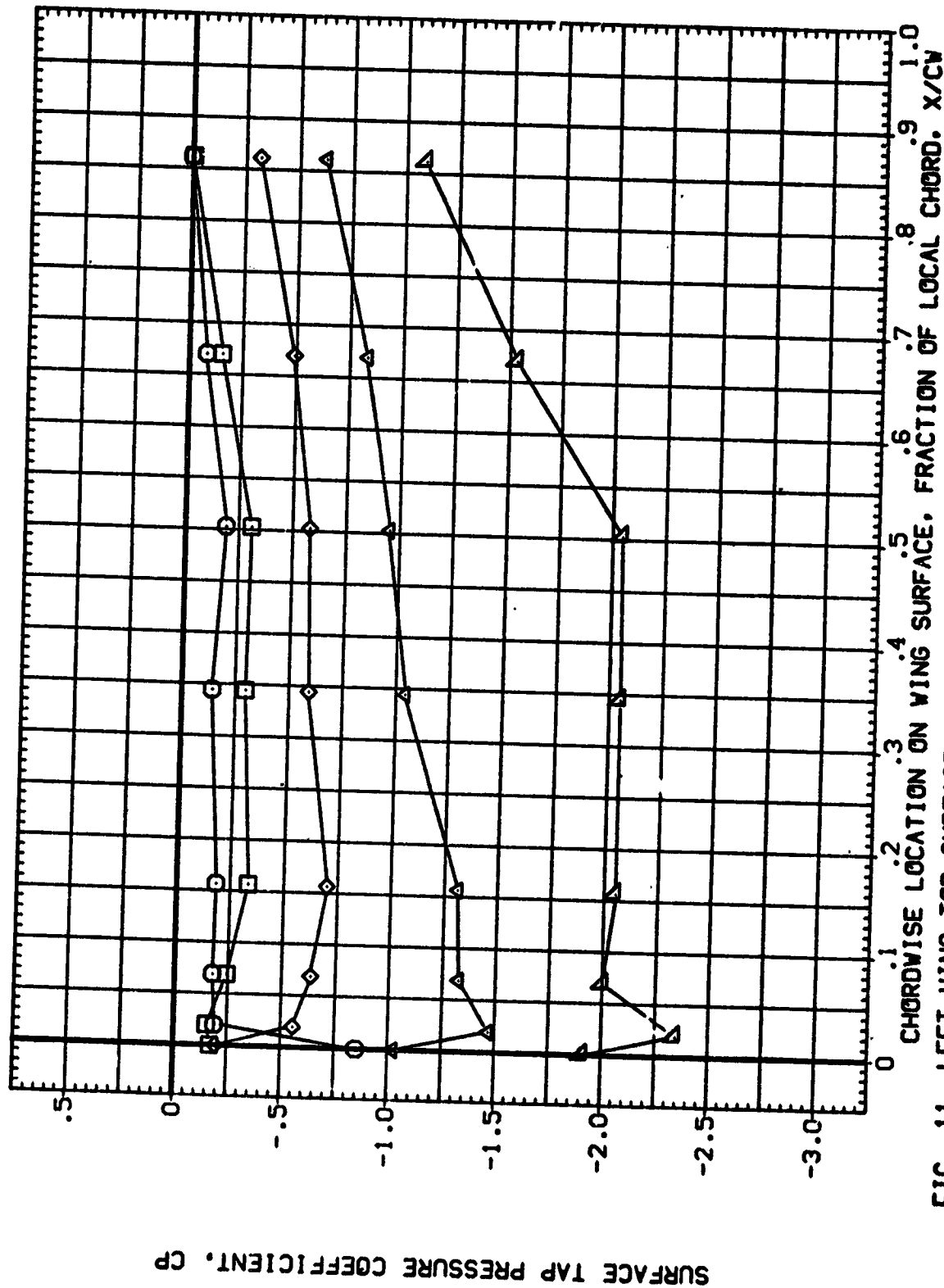


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL	ALPHA	2 γ /8 γ	BETA	RUDDER	PARAMETRIC VALUES	55.000
▽	-4.000	.259	.000	80FLAP	.000	.000
◇	.000			R-ELVN	16.300	.000
△	4.000				.000	.600
□	8.000					
▽	12.000					

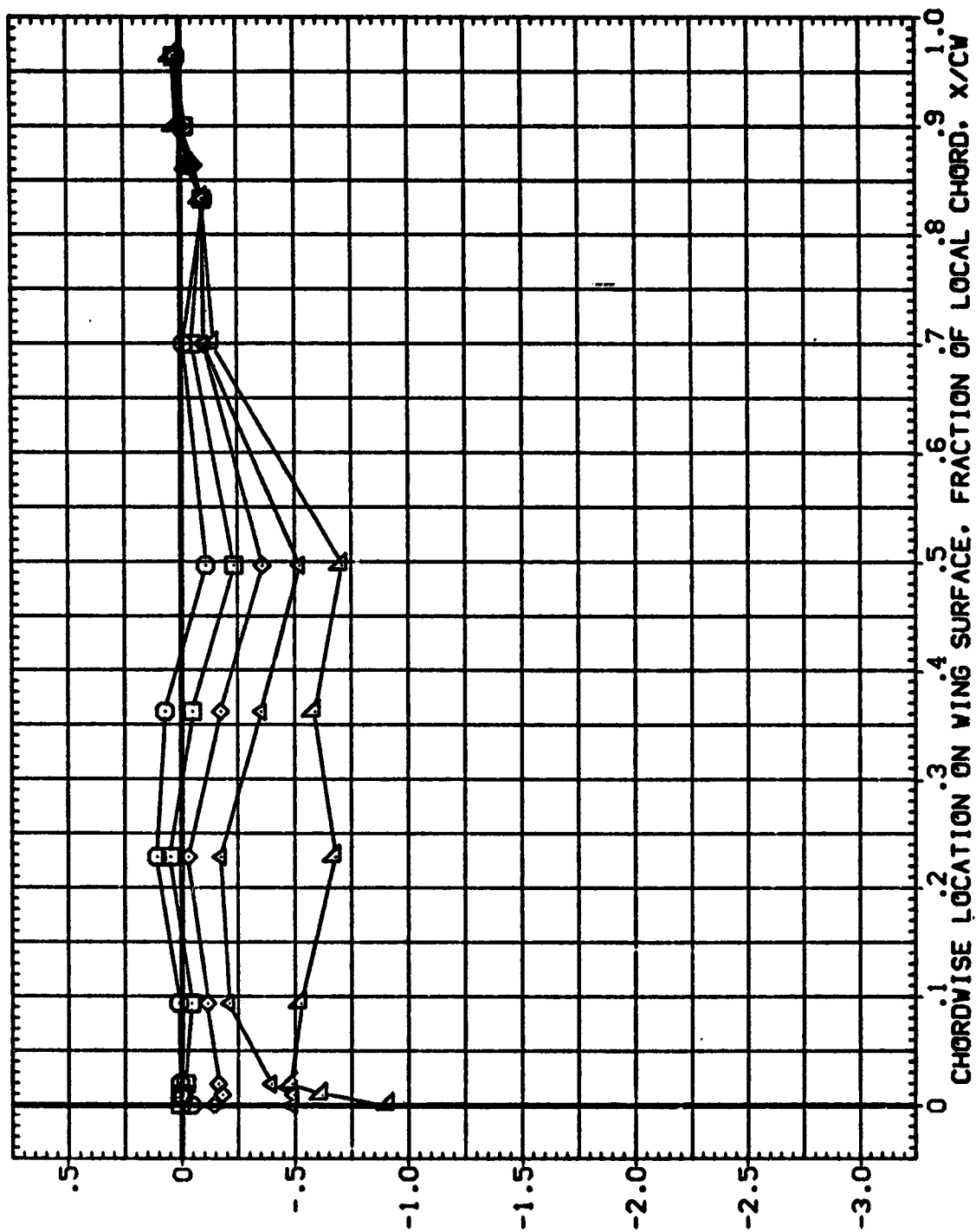


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL	ALPHA	2V/BV	BETA	RUDDER	BOFLAP	R-ELVN	PARAMETRIC VALUES	SPDRBK	L-ELVN	MACH
▽	-4.000	.427	.000					.000		.55.000
◇	.000							.000		.000
△	4.000							.000		.000
□	8.000							.000		.000
○	12.000							.000		.000

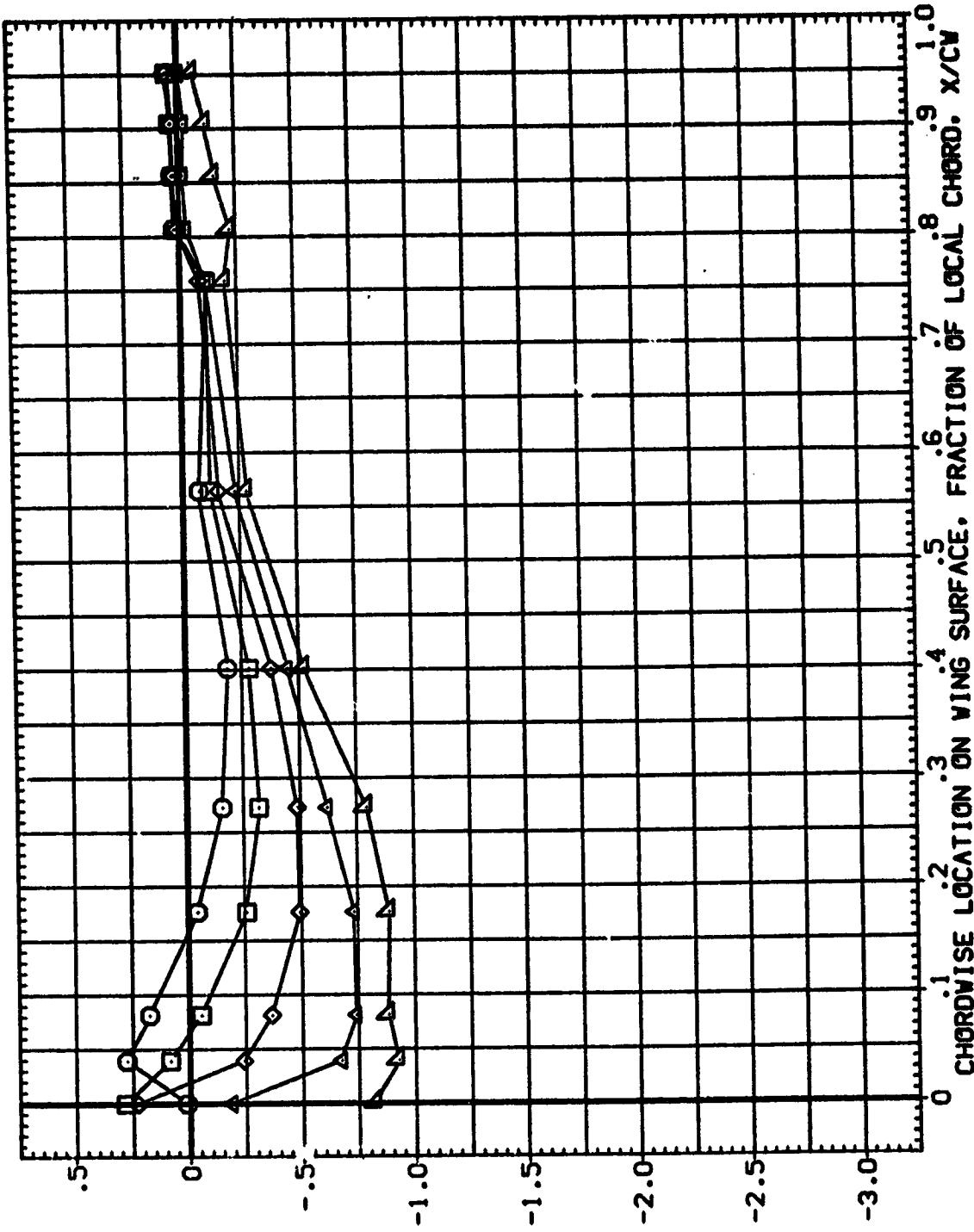


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL	ALPHA	2Y/8V	BETA	RUDDER	PARAMETRIC VALUES	
□	-4.000	.673	.000	80FLAP	.000	
◇	.000			R-ELVN	16.300	
△	4.000				L-ELVN	.000
▽	8.000				MACH	.600
	12.000					
						55.000

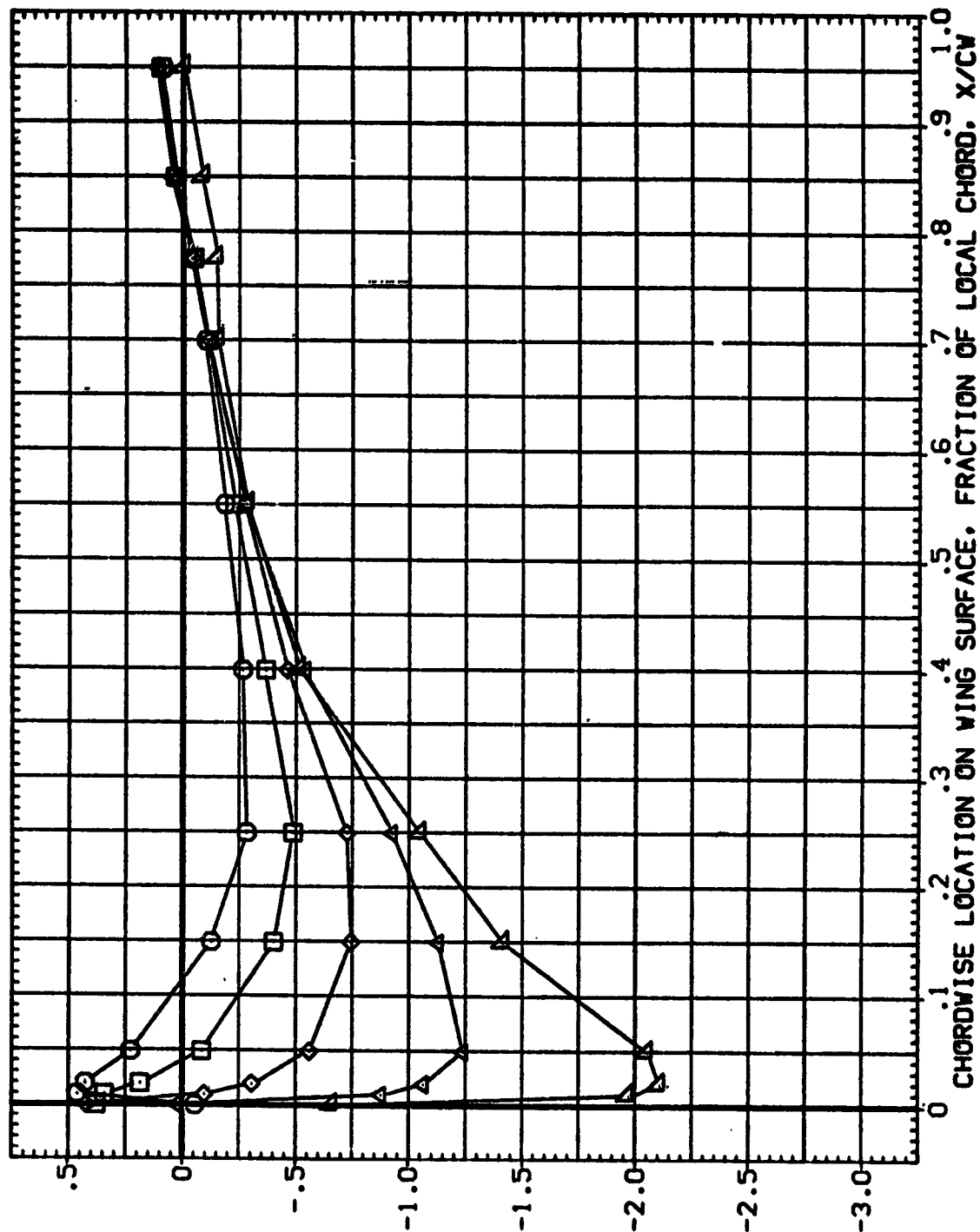


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

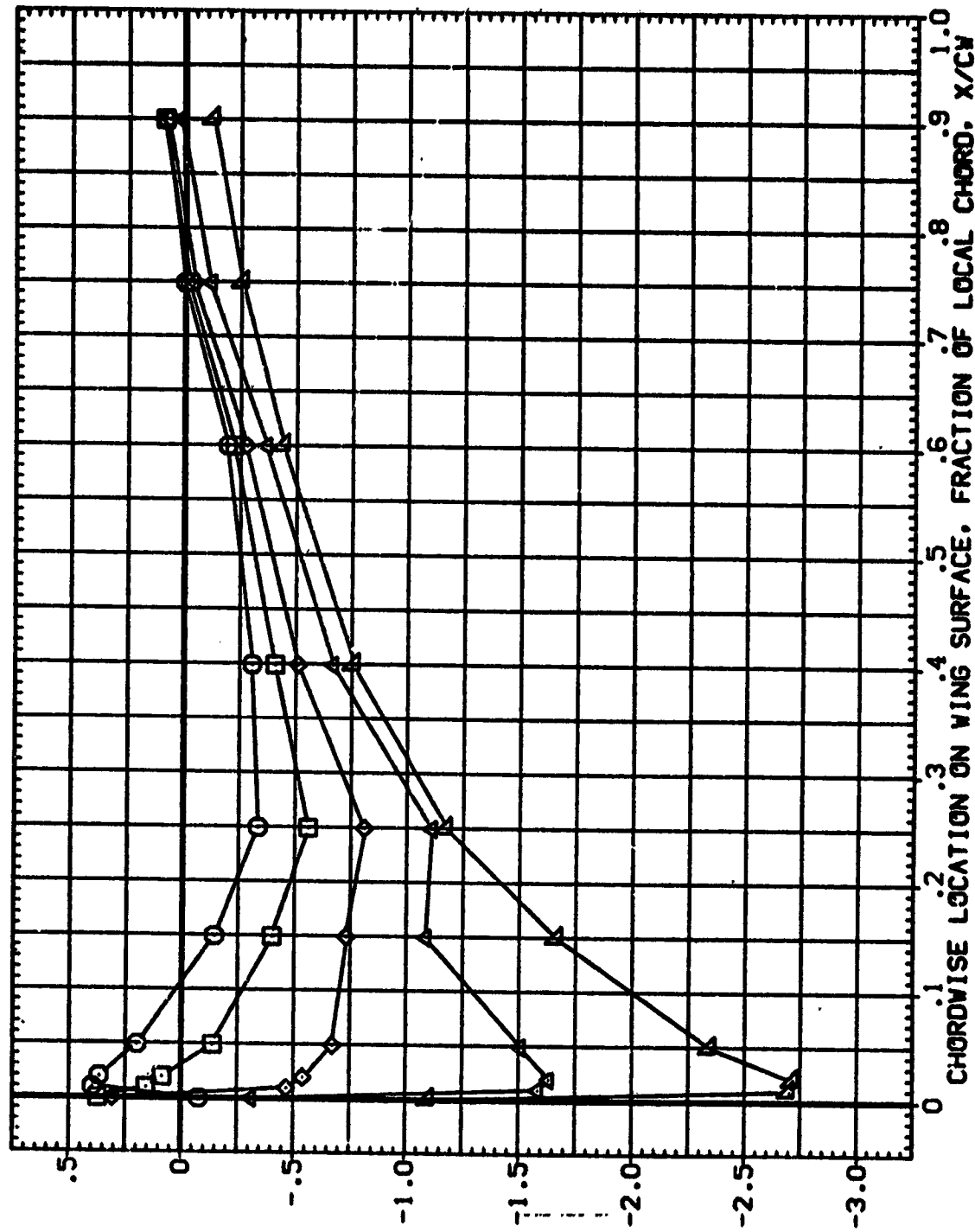
AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U05)

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V BETA
 .887 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .500



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL	ALPHA	2Y/8V	BETA	PARAMETRIC VALUES
□	-4.000	.972	.000	RUDDER
□	.000			80FLAP
◇	4.000			R-ELVN
△	8.000			L-ELVN
△	12.000			MACH
				SPDRGR
				.000
				16.300
				.000
				.500
				55.000

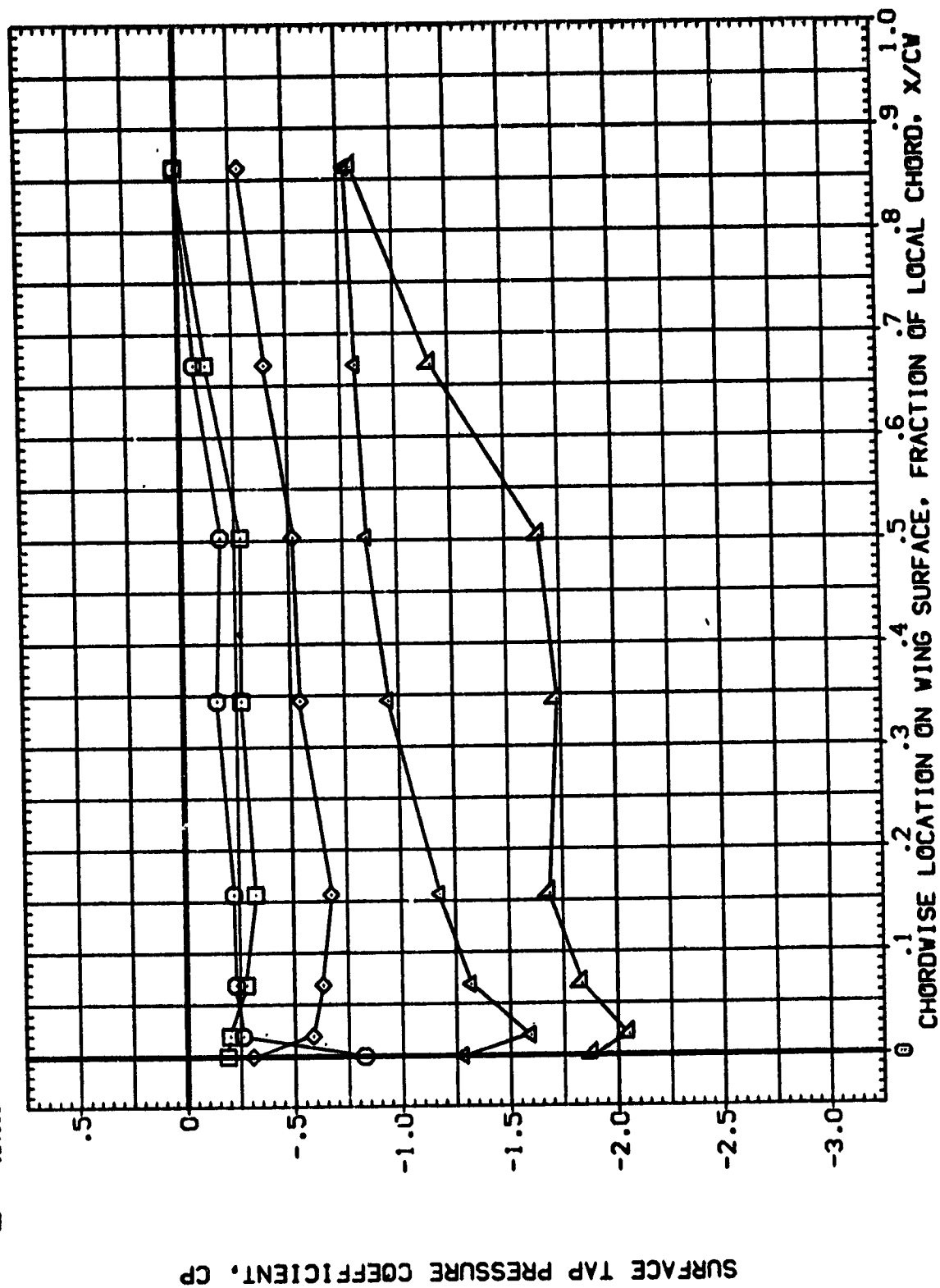


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V BETA
 .299 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 80FLAP 16.300 L-ELVN .000
 R-ELVN .000 NACH .630

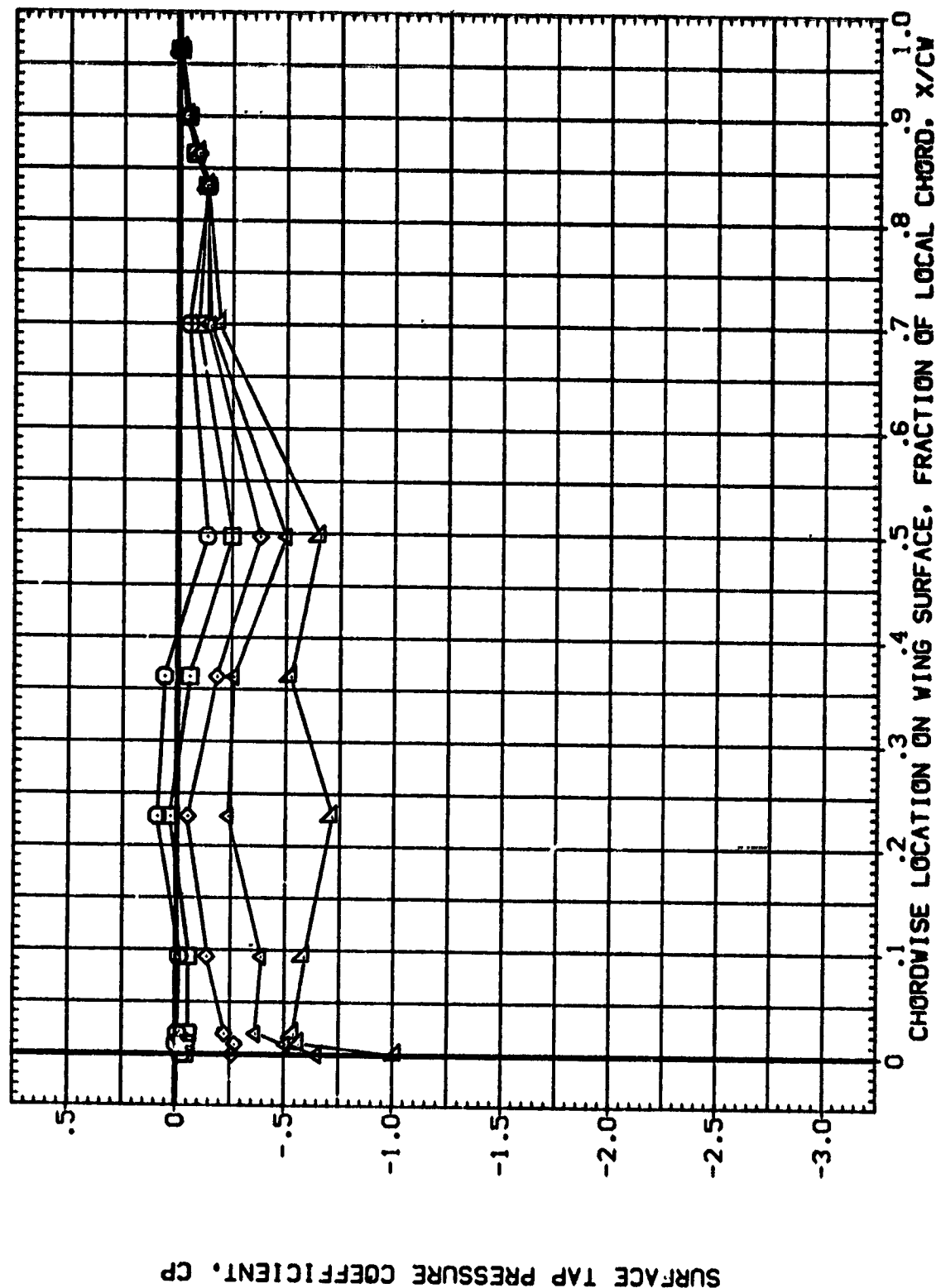


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .427
 4.000

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 .000
 16.300
 .000

SPDRKT
 L-ELVN
 MACH
 55.000
 .000
 .600

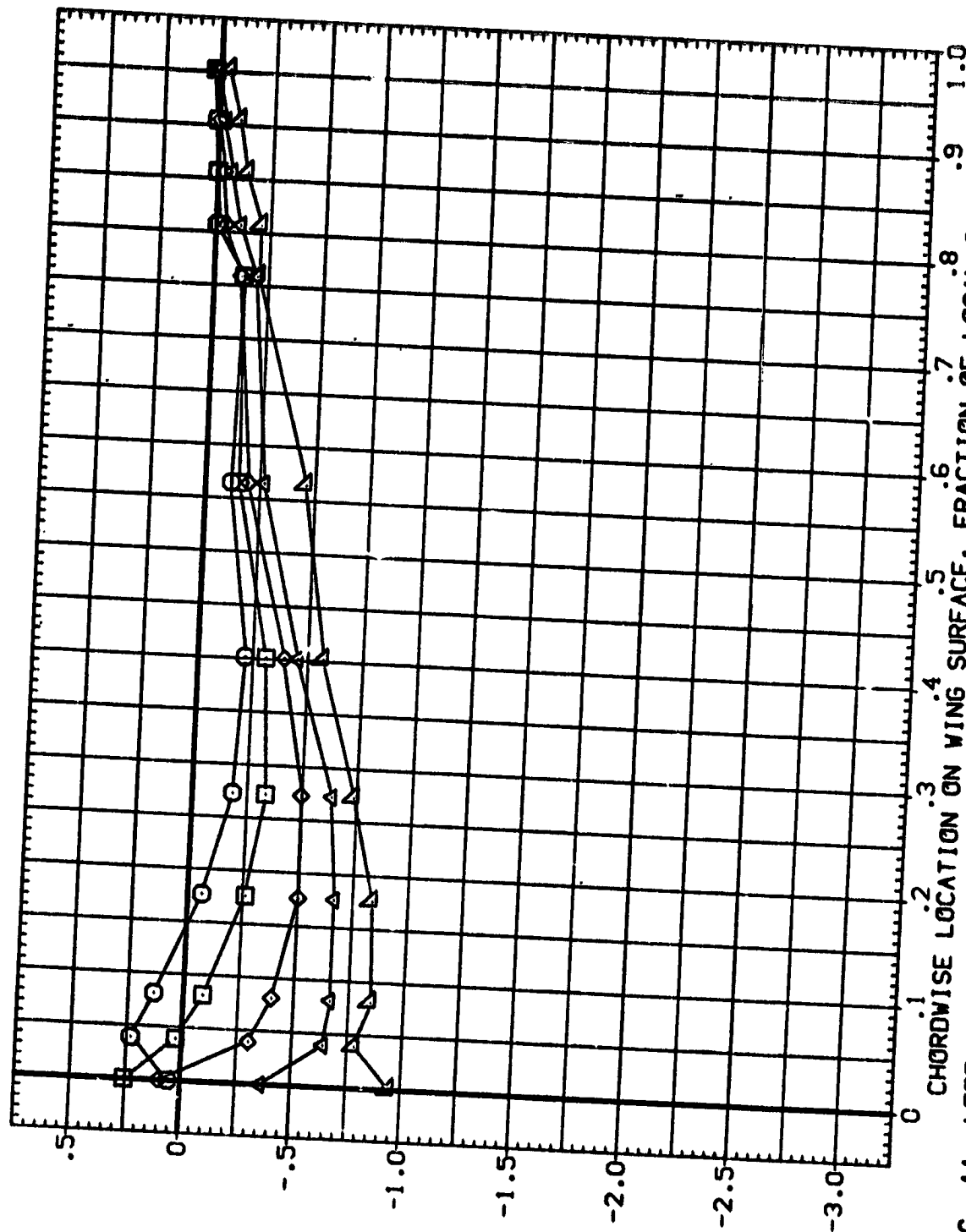


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

PARAMETRIC VALUES
 .0000 SP0BRK 55.000
 16.300 L-ELVN .000
 .000 MACH .600

RUDDER
 BOFLAP
 R-ELVN

BETA
 4.000

ZY/BN
 .573

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◊ □ ○

SURFACE TAP PRESSURE COEFFICIENT, CP

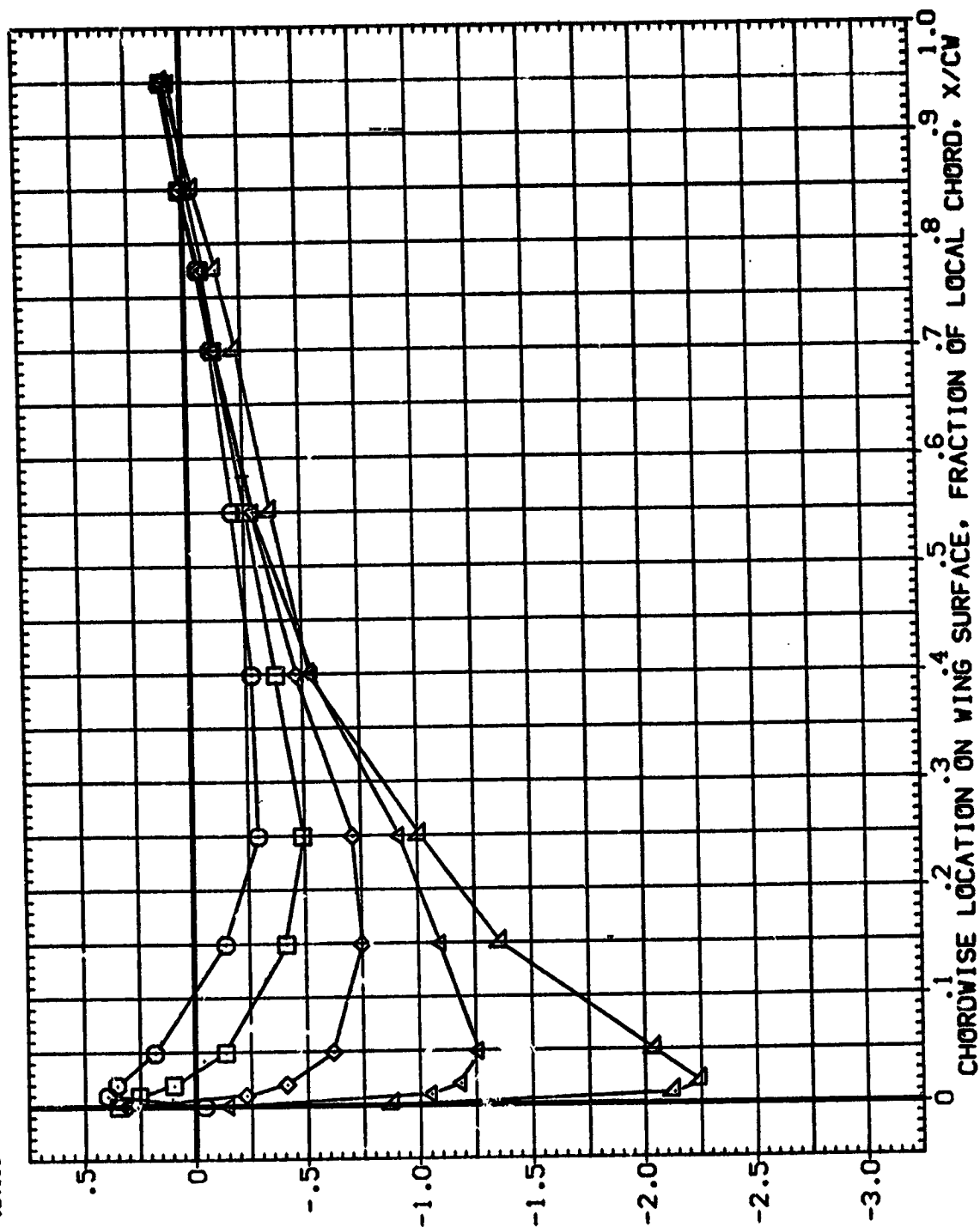


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .887
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

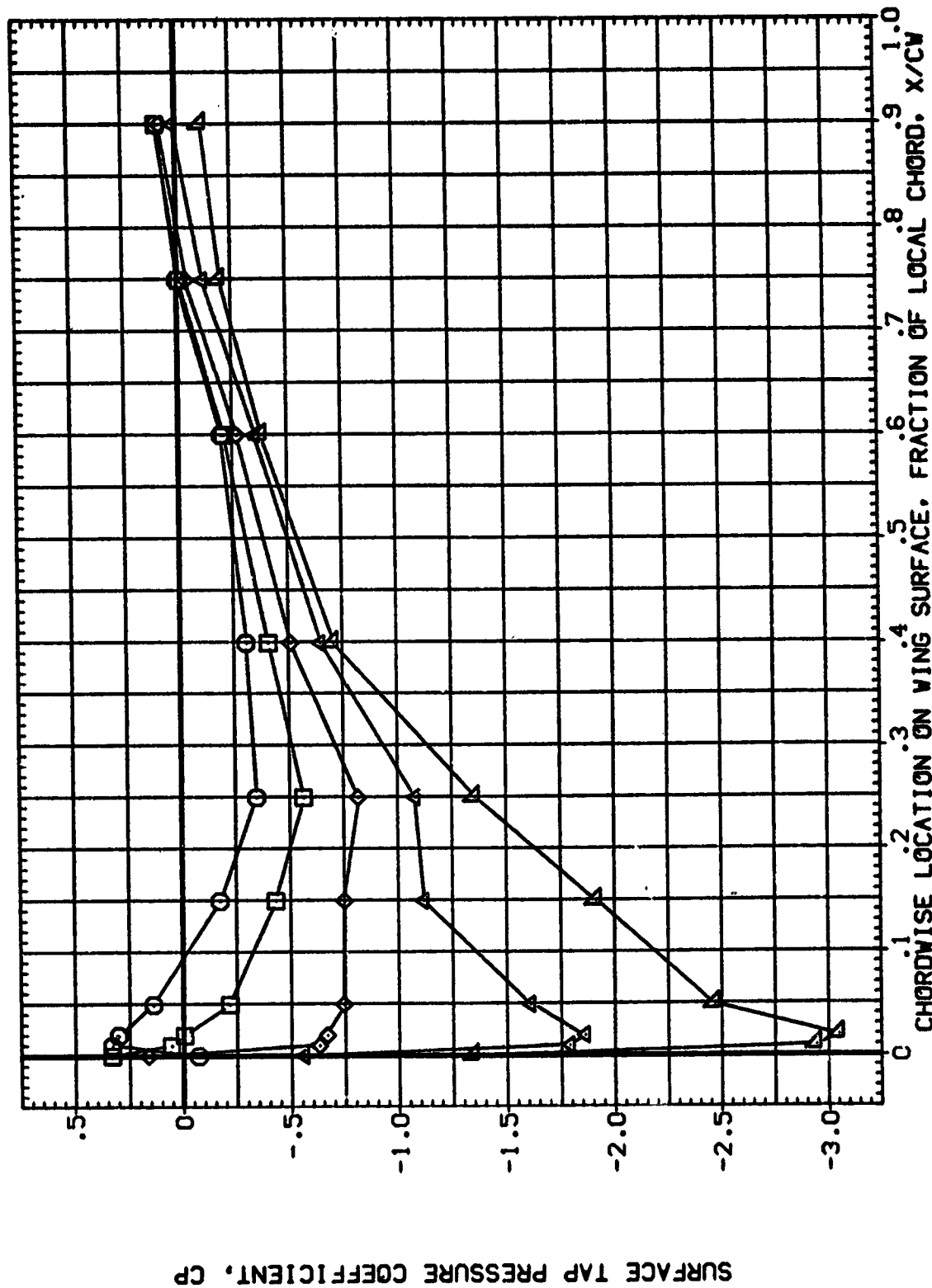


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .972

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

.000
 16.300
 .000

SPDRX
 L-ELVN
 MACH

.000
 .000
 .600

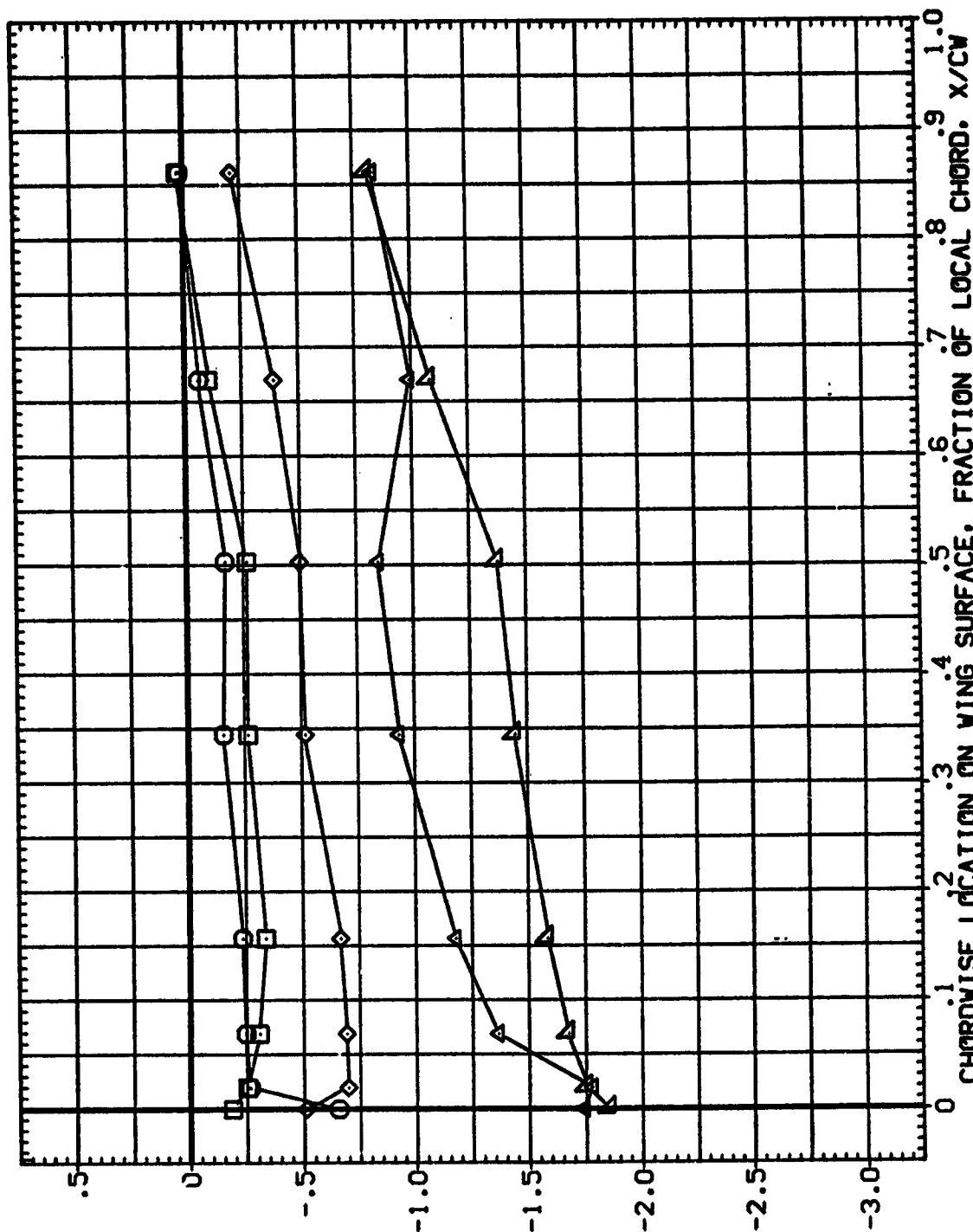


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

PARAMETRIC VALUES
 RUDDER .000 SPDBRK 53.000
 BDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

SYMBOL ALPHA 2Y/BV BETA
 -4.000 .299 8.000
 .000 .000
 4.000
 8.000
 12.000

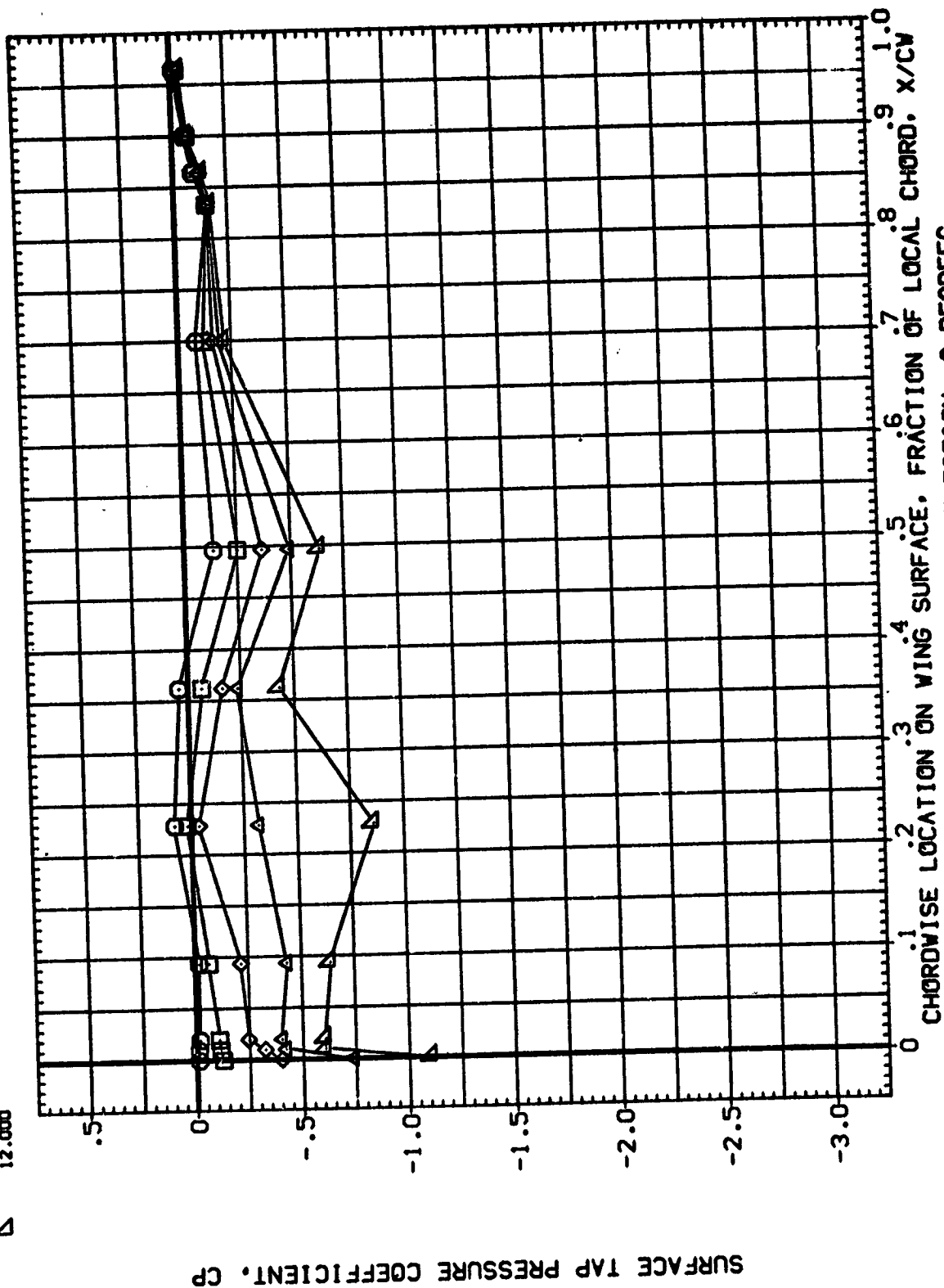


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

PARAMETRIC VALUES
 RUDDER .000 SPDRKX 55.000
 SDFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .600

SYMBOL ALPHA 2Y/8V BETA
 -4.000 .427 8.000
 .000
 4.000
 8.000
 12.000

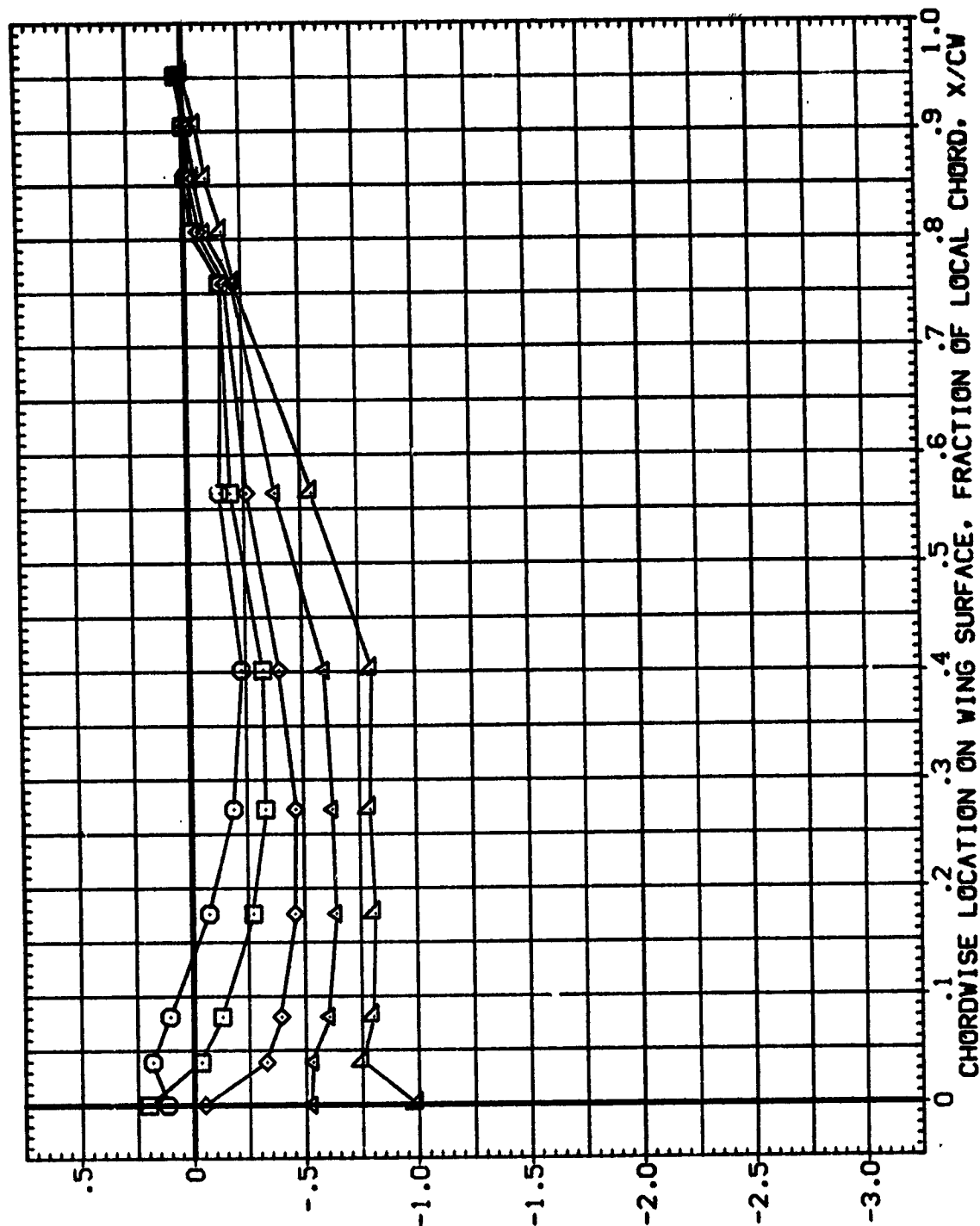


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL	ALPHA	2°/BN	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.673	8.000	80FLAP	.000 SPOBRK
□	.000			R-ELVN	16.300 L-ELVN
◇	4.000				.000 MACH
△	8.000				
▽	12.000				
					\$5.000
					.000
					.600

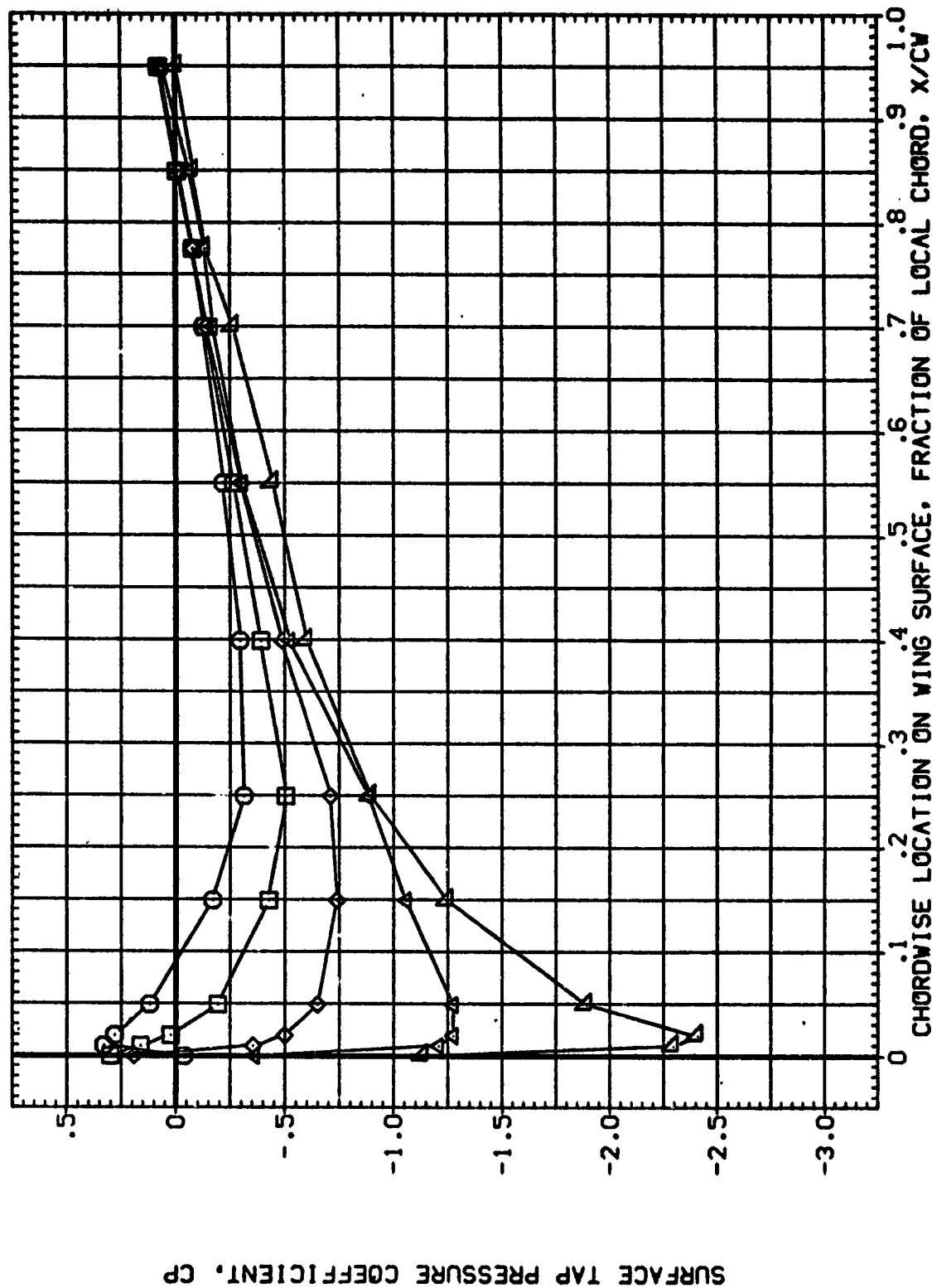


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 4.000
 8.000
 12.000

2Y/BV
 .887

BETA
 8.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000 55.000
 16.300 .000
 .000 .600

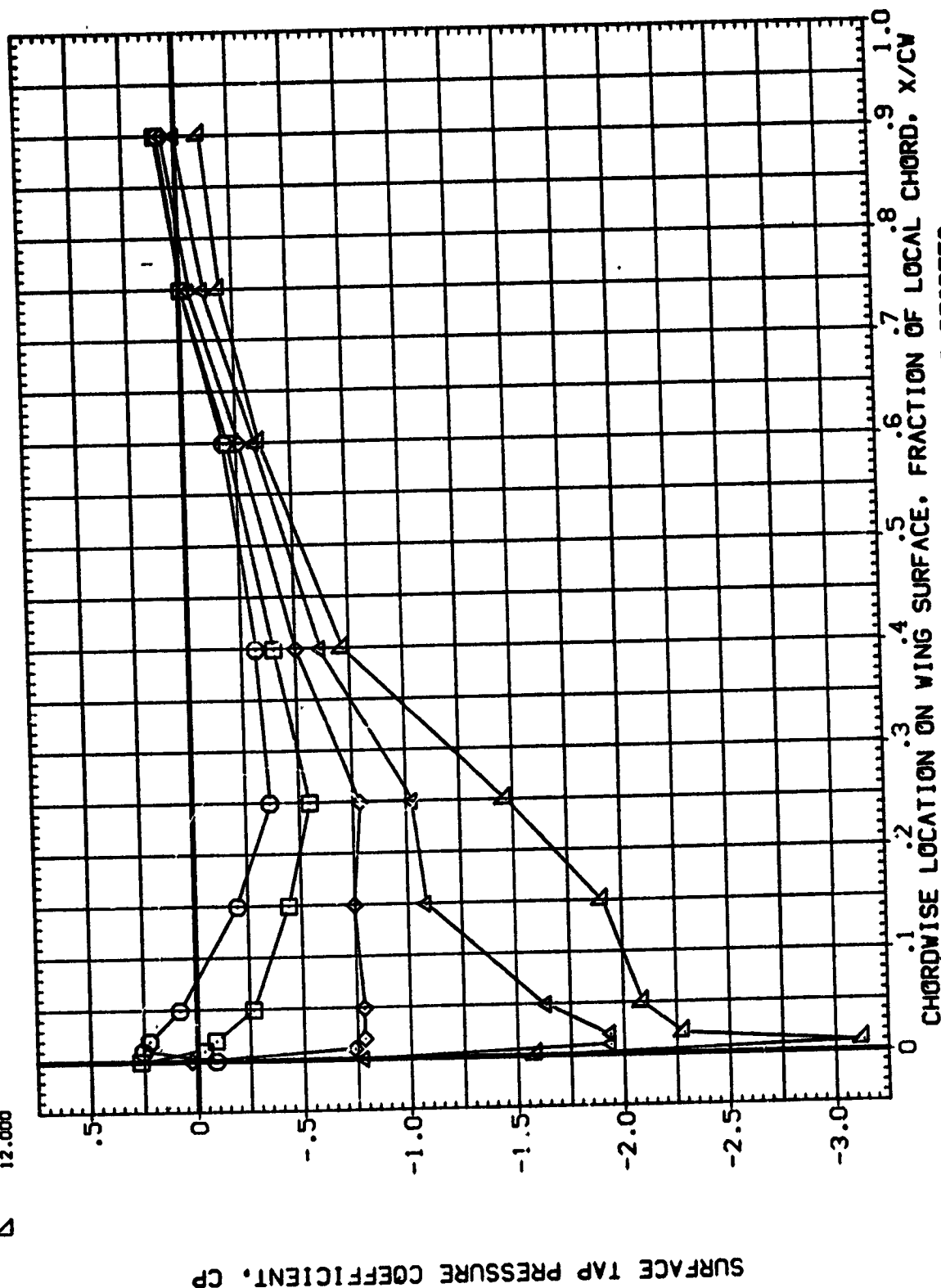


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(3A148) -140A/B/C/R ORB LEFT WING TOP(1E8U05)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRK	L-ELVN	MACH
▽	-4.000	.972	8.000	80FLAP	.000	.000	.600
◇	.000			R-ELVN	.000	.000	
□	4.000						
△	8.000						
▽	12.000						

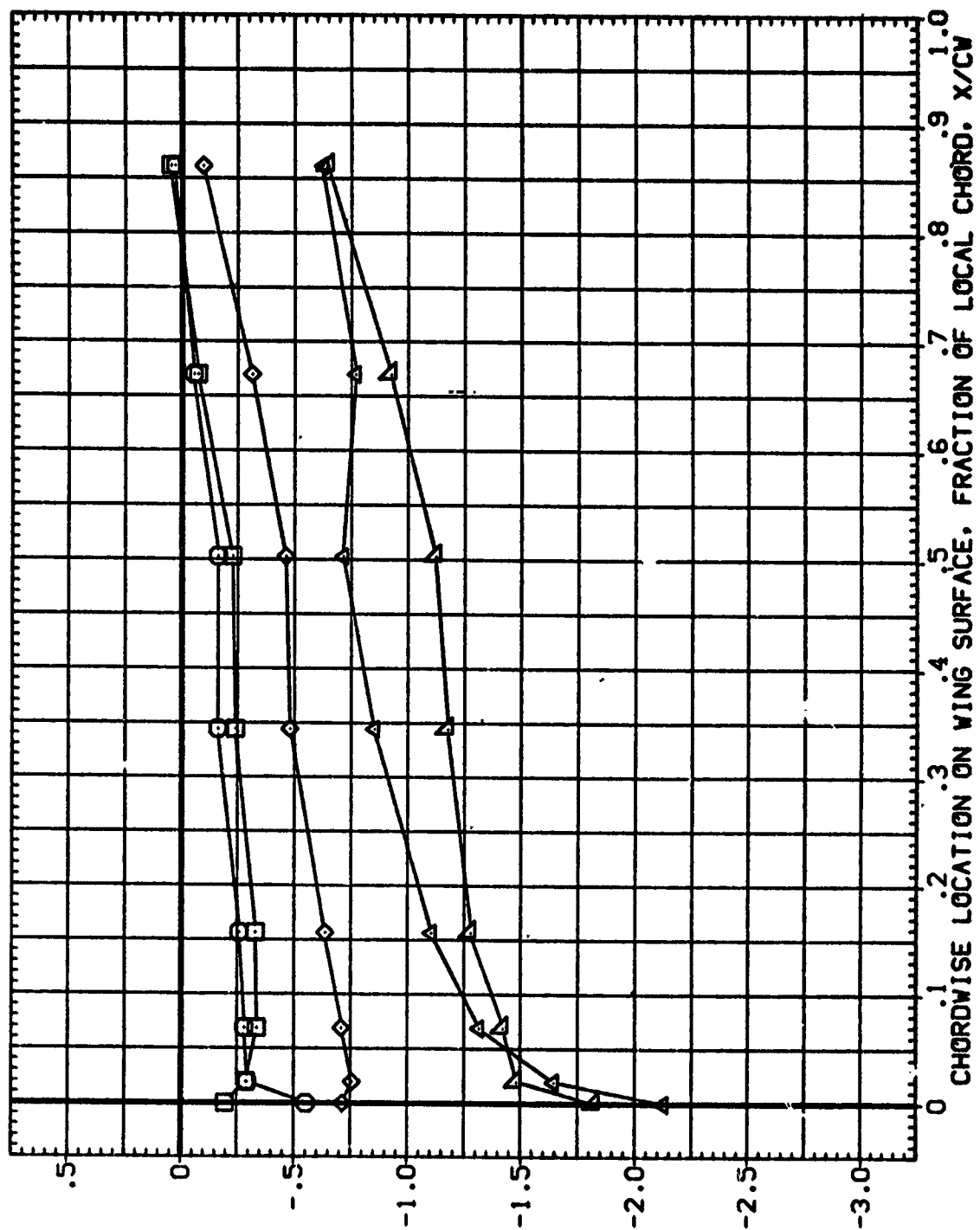


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U04)

SYMBOL
 ▲
 ◆
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .299

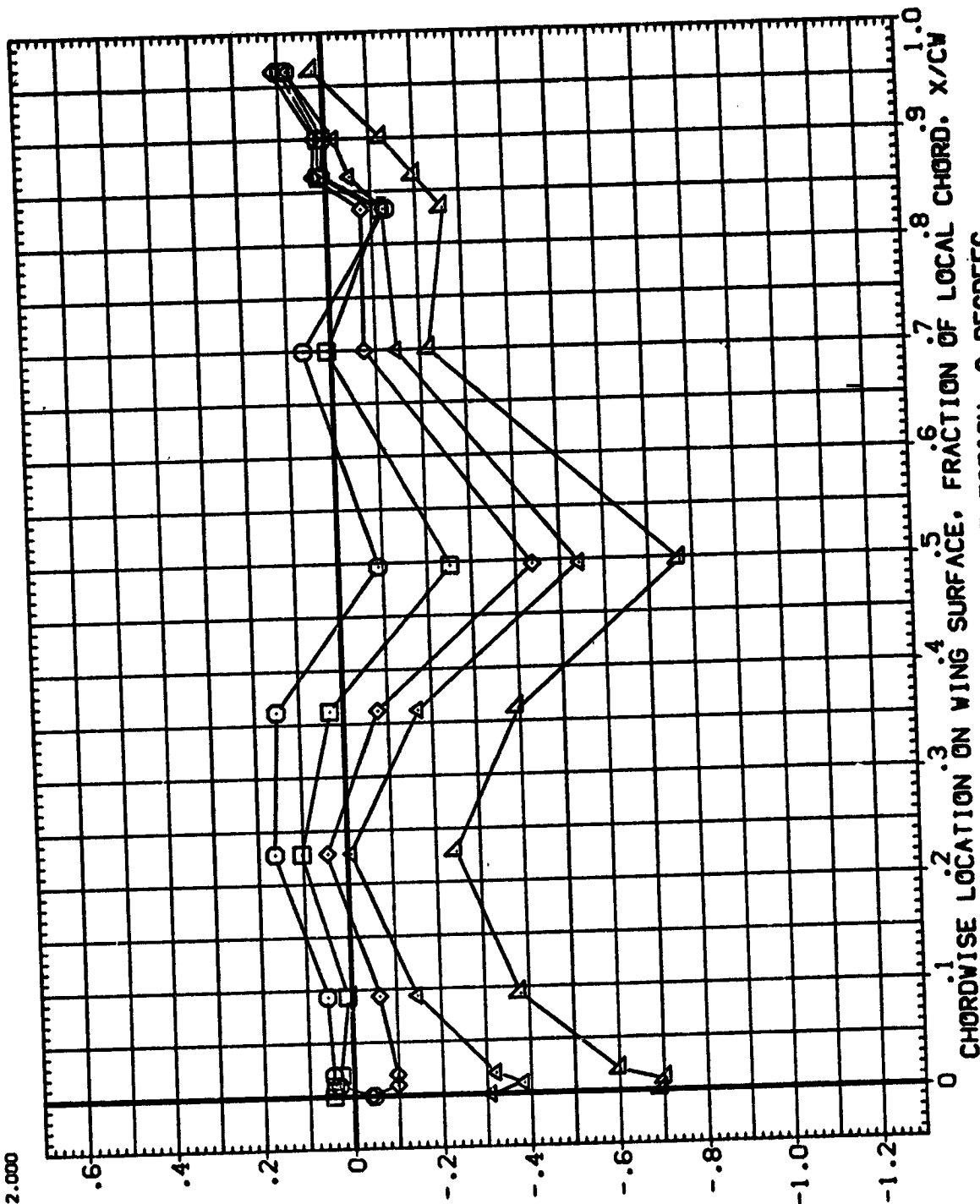
BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

SPDRK
 16.300
 .000

L-ELVN
 .000

MACH
 .900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

REPRODUCIBILITY OF THE
 ORIGINAL PAGE IS POOR

AMES 11-073(OA148) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

SYMBOL	ALPHA	ZY/BN	BETA	RUDDER	PARAMETRIC	SP	55.000
○	-4.000	.427	-4.000	80% LAP	.000	L-ELV	.000
□	.000			R-ELVN	.000	MACH	.900
◇	4.000						
△	8.000						
▽	12.000						

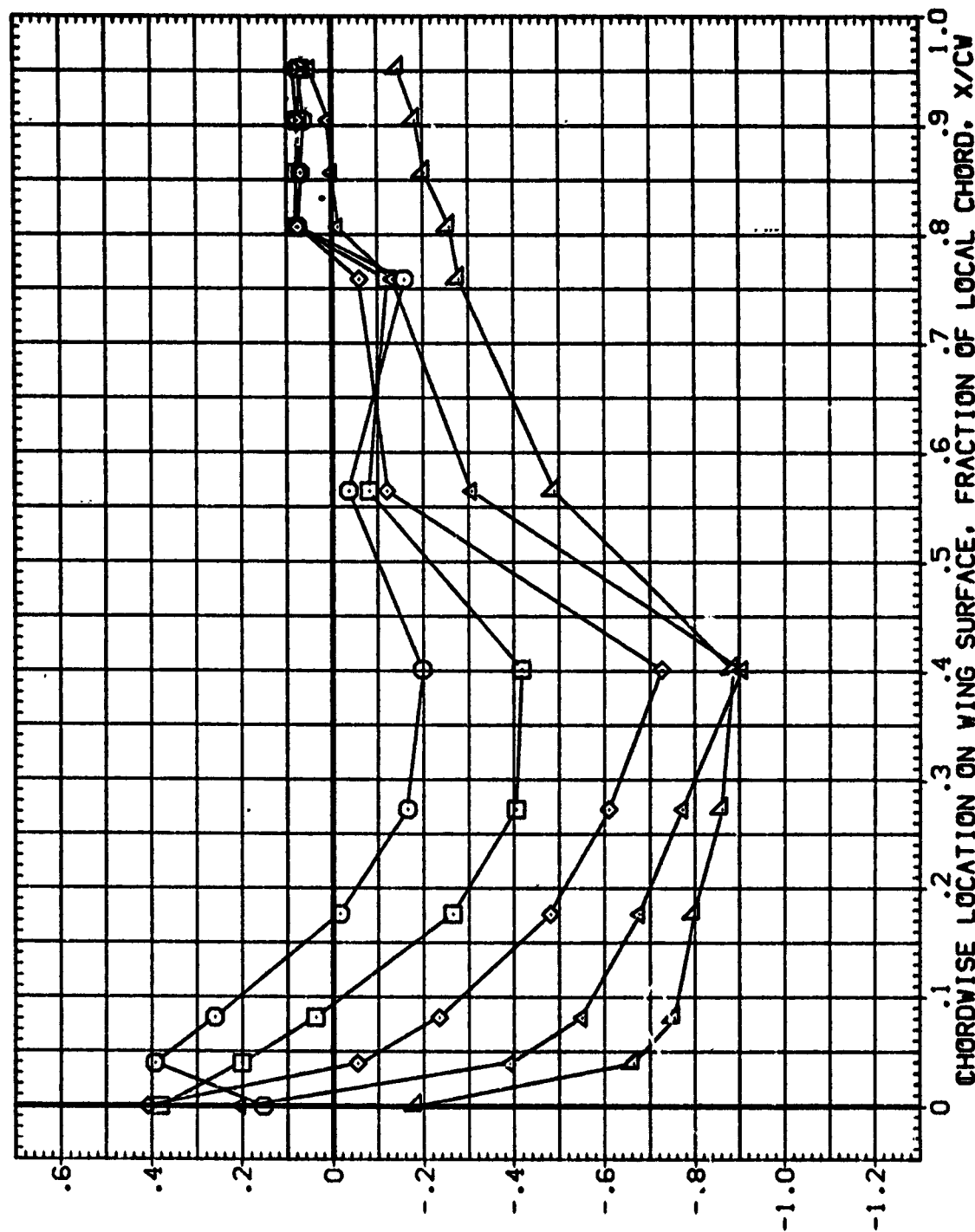


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U04)

SYMBOL	ALPHA	2Y/8V	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.573	-4.000	BOFLAP	.000
◇	.000			R-ELVN	16.300
□	4.000				.000
△	8.000				.000
	12.000				.900

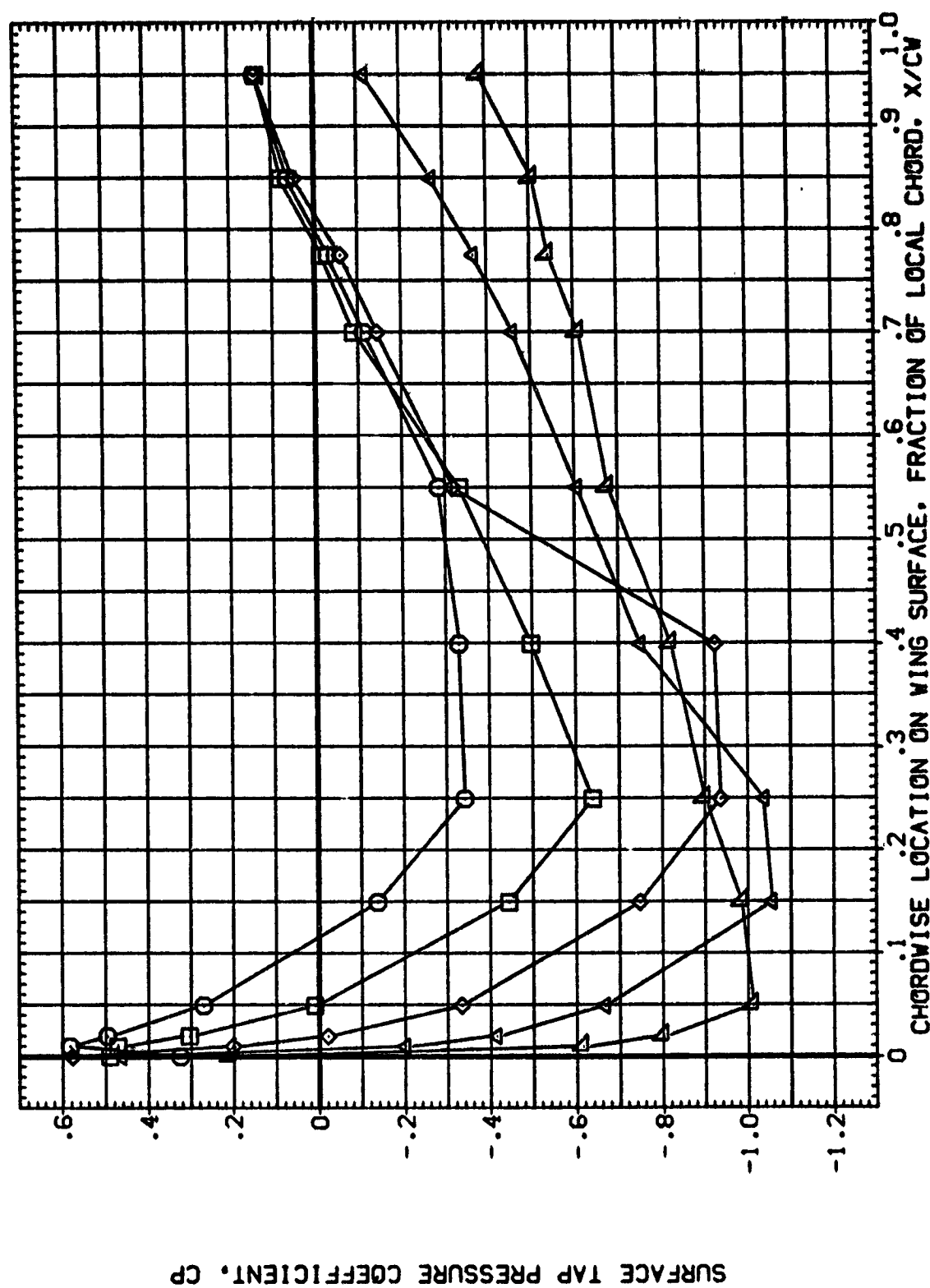


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(CA148) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

SYMBOL	ALPHA	2Y/BN	BETA	RUGGER	PARAMETRIC VALUES
○	-4.000	.887	-4.000	BDFLAP	.000
□	.000			R-ELVN	16.300
◇	4.000				MACH
△	8.000				
▽	12.000				
					.000
					.900

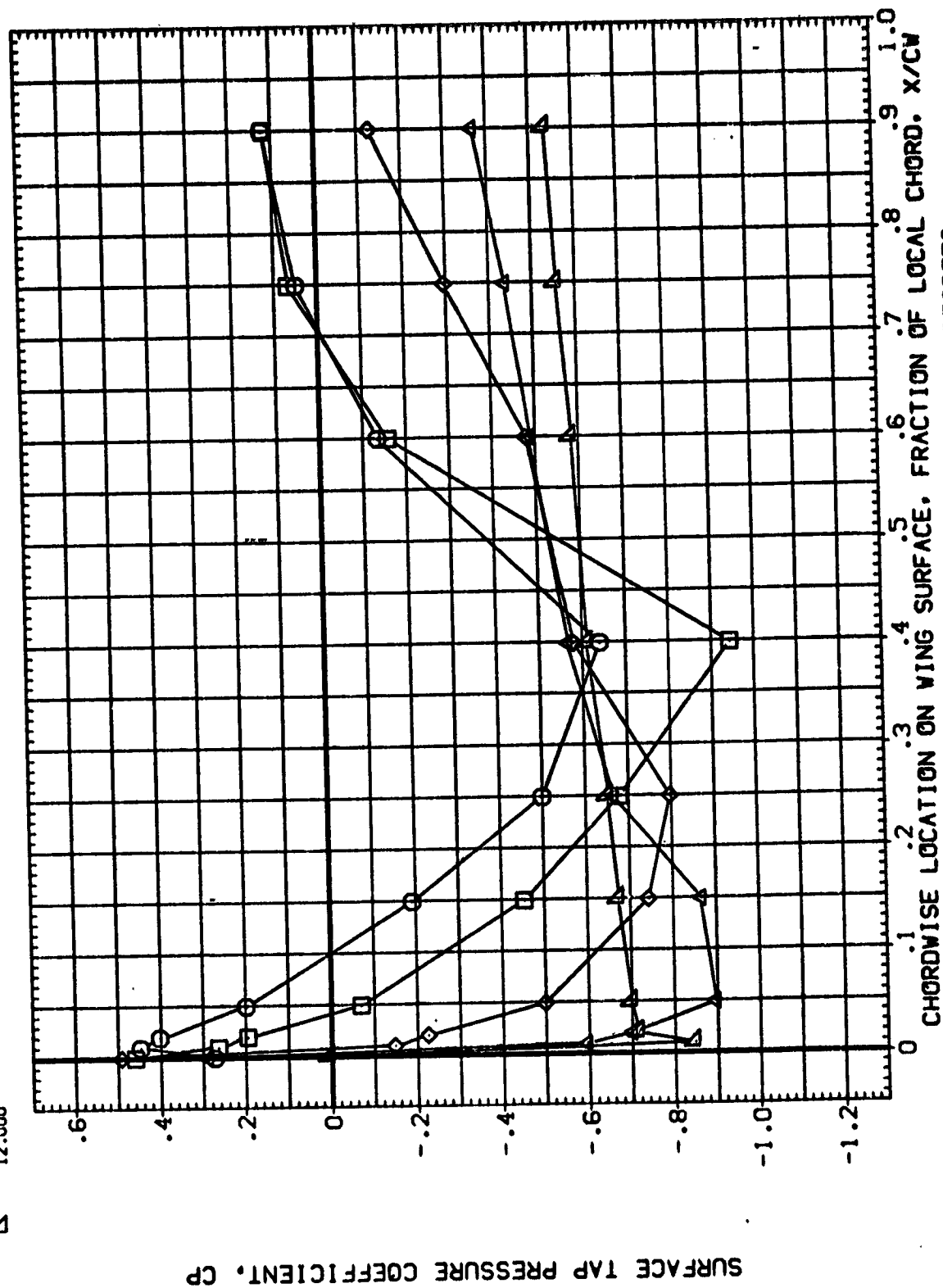


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

PARAMETRIC VALUES
 RUDDER .000 SPURK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 NACH .900

ALPHA 2Y/BV BETA
 -4.000 .972 -4.000

SYMBOL
 -4.000
 .000
 4.000
 8.000
 12.000

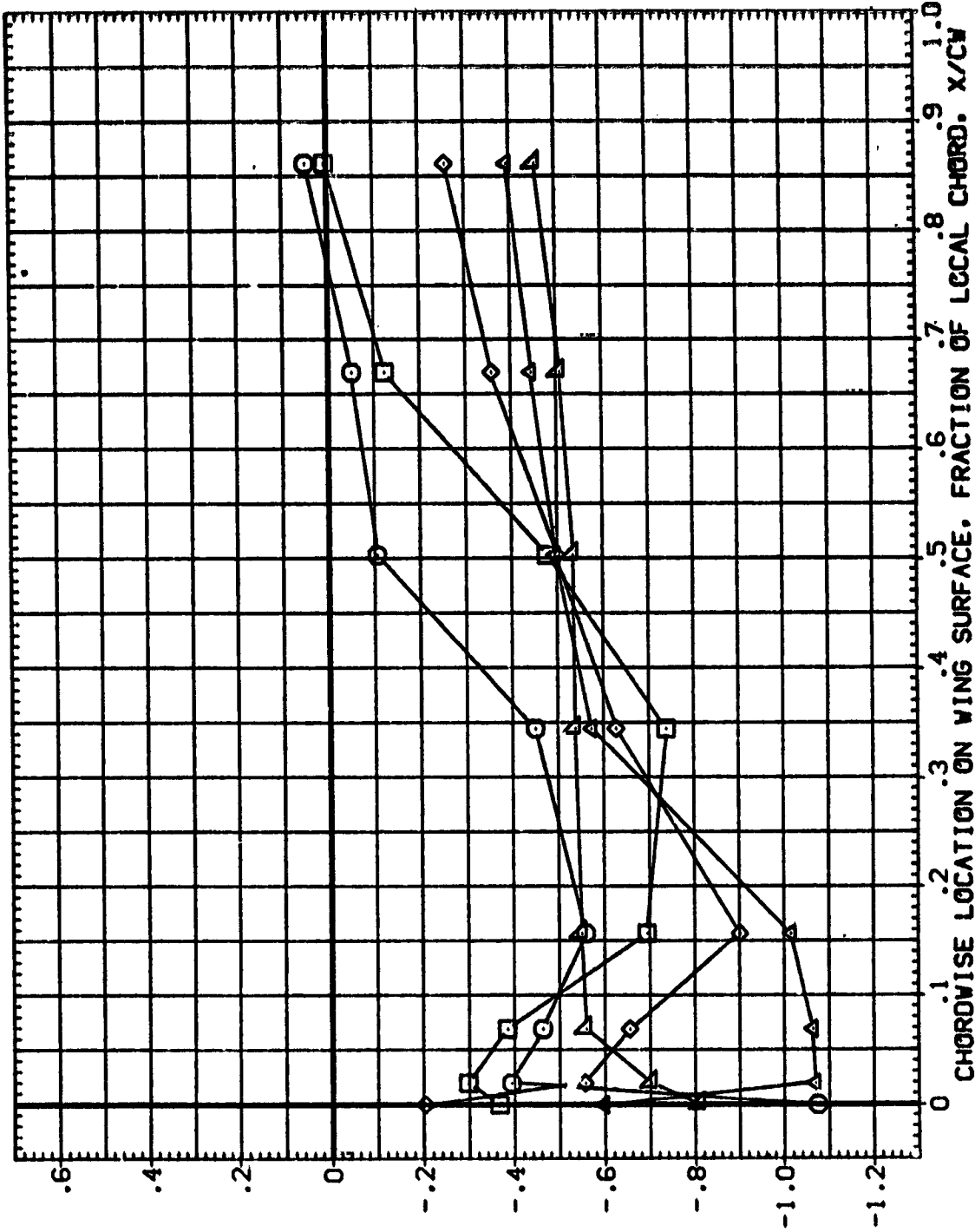


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U04)

SYMBOL	PARAMETRIC VALUES	
	ALPHA	BETA
○	-4.000	.299
□	.000	.000
◇	4.000	.000
△	8.000	.000
▽	12.000	.000
	RUDDER	SPDPRY
	80FLAP	L-ELVN
	R-ELVN	MACH
		.000
		.000
		.900

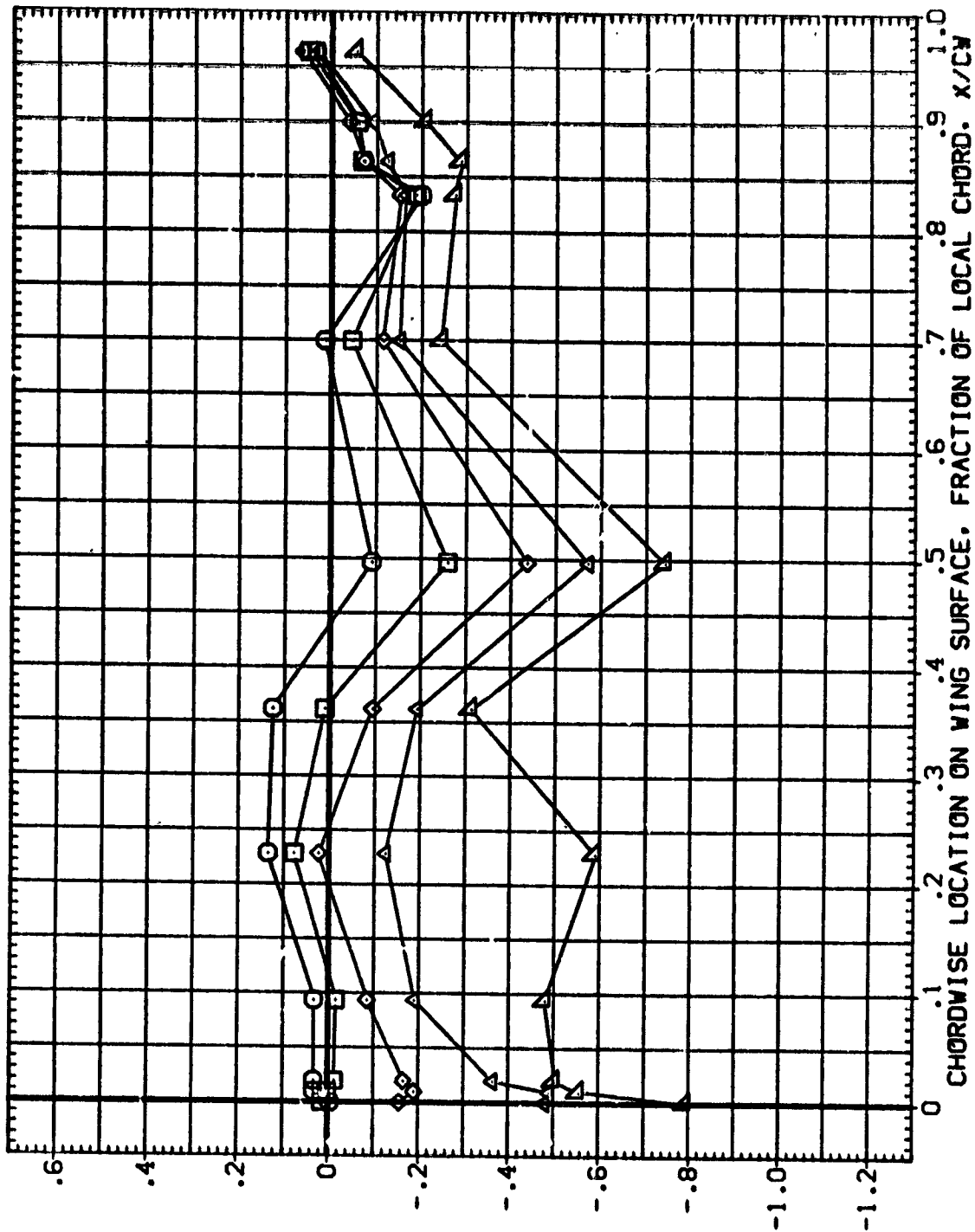


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP (IE8U04)

SYMBOL
 ▽
 ◇
 ◊
 □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .427

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SP088K 55.000
 BOFLAP 15.300 L-ELVN .000
 R-ELVN .000 MACH .900

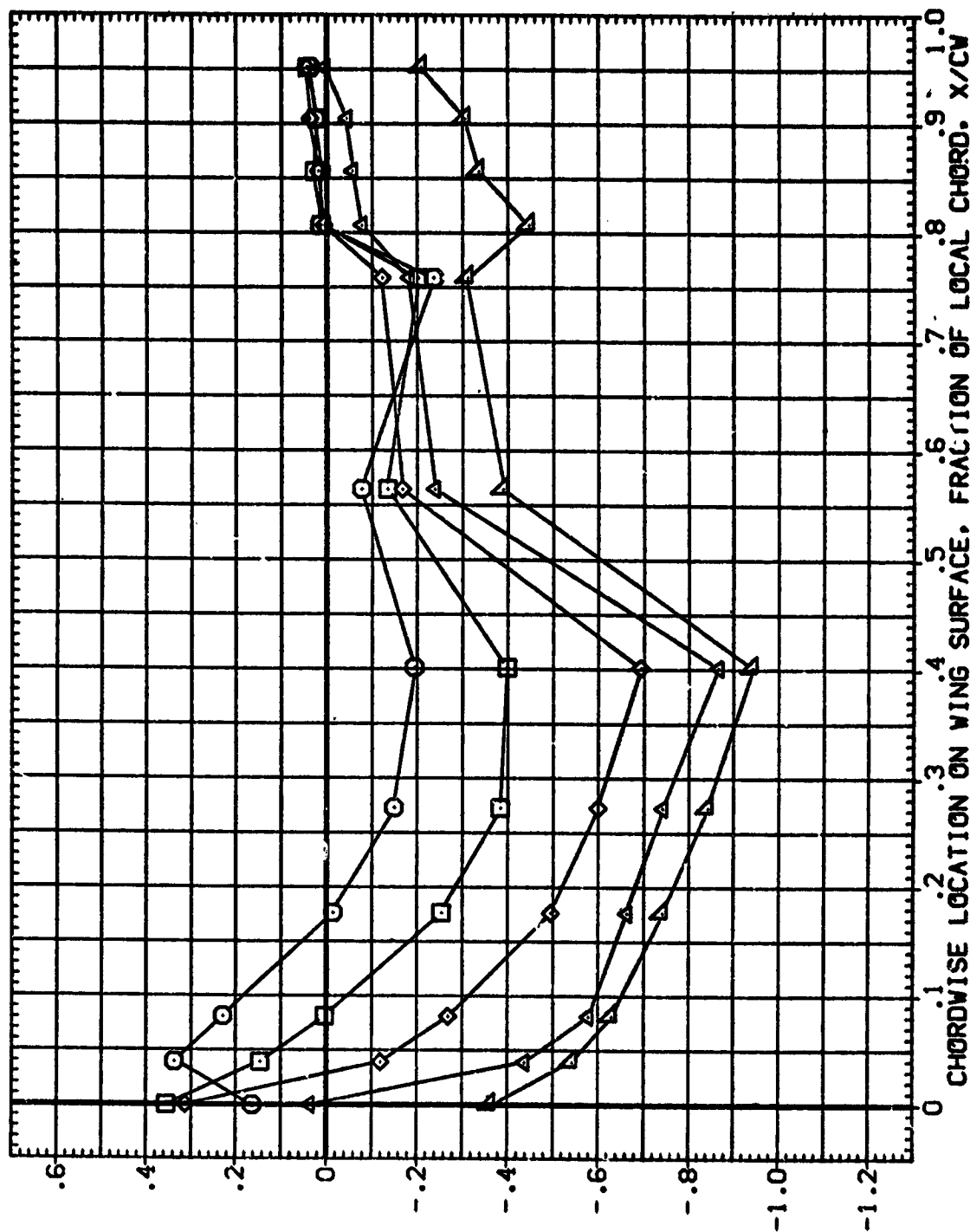


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U04)

SYMBOL	ALPHA	2Y/8V	BETA	RUDDER	PARAMETRIC VALUES	
▽	-4.000	.673	.000	80FLAP	.000	55.000
◇	4.000			R-ELVN	16.300	.000
□	8.000				.000	.900
△	12.000					

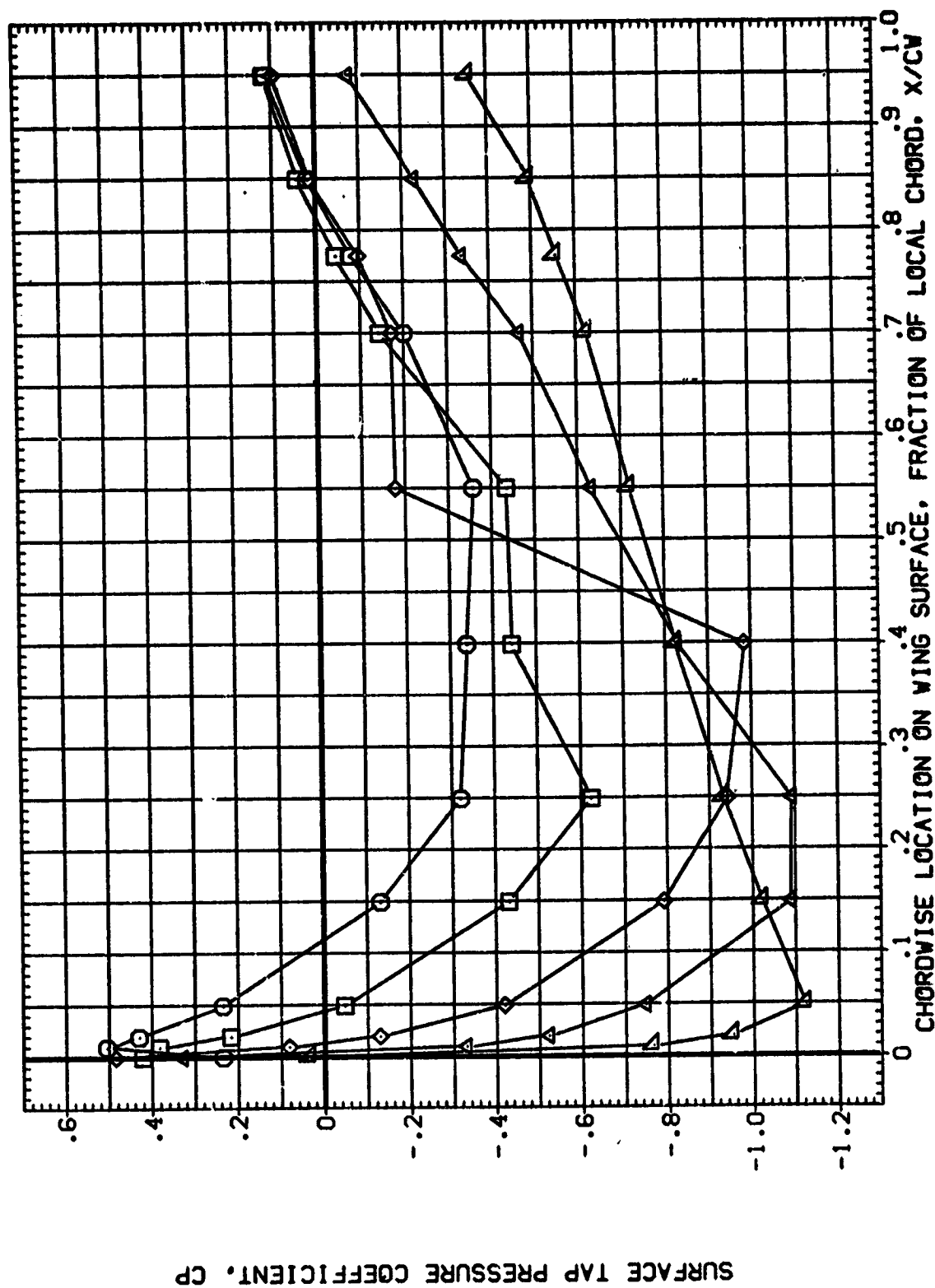


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL	ALPHA	2Y/BV	BETA	PARAMETRIC VALUES
▽	-4.000	.887	.000	RUDDER .000
◇	.000			80FLAP 16.300
□	4.000			L-ELVN .000
△	8.000			R-ELVN .500
▽	12.000			MACH .500

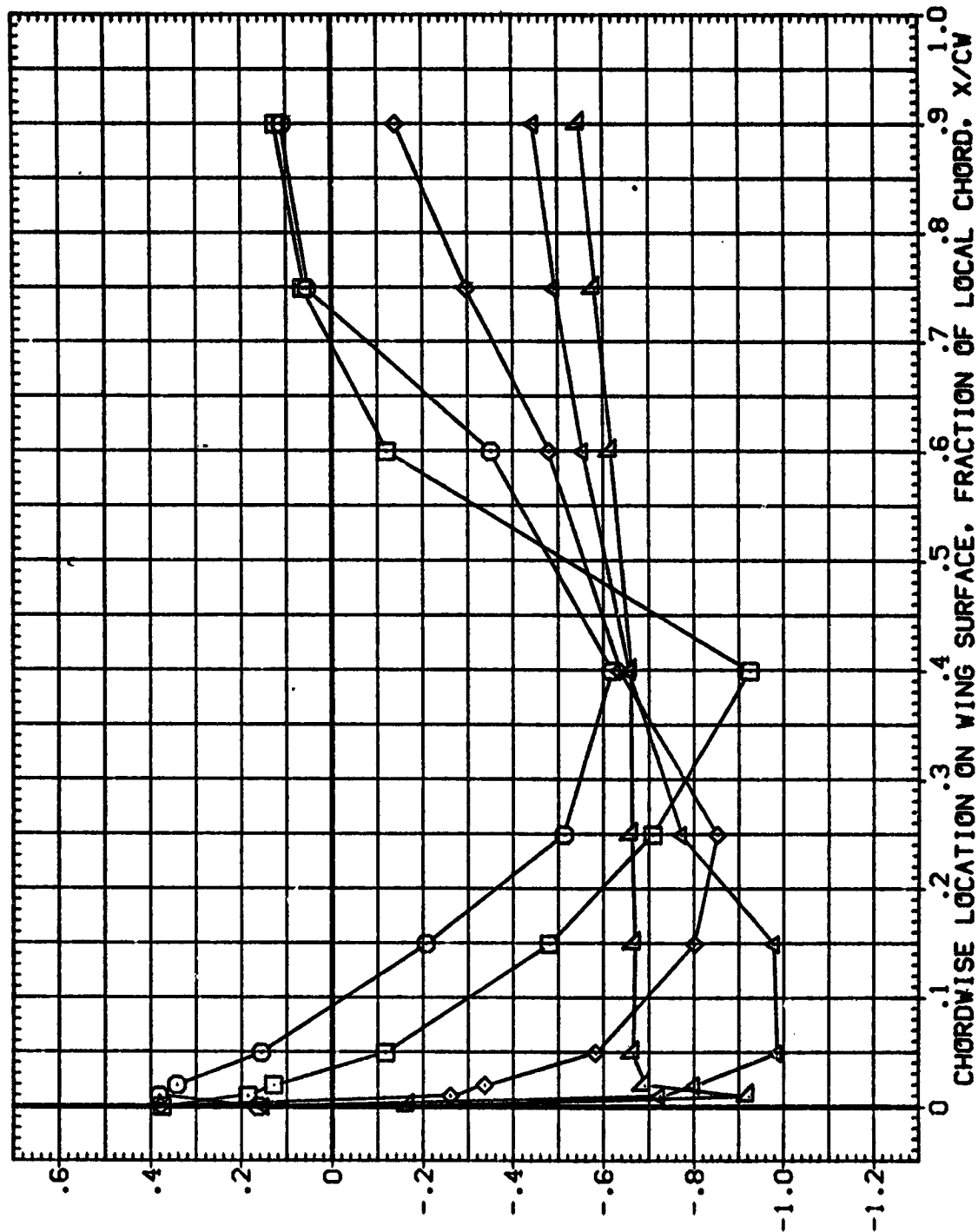


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

SYMBOL
□ ◇ △ ▽

ALPHA
-4.000
.000
4.000
8.000
12.000

ZY/BN .972

BETA .000

RUDDER
BDFLAP
R-ELVN

PARAMETRIC VALUES
.000 SPDBRK
16.300 L-ELVN
.000 MACH

55.000
.000
.900

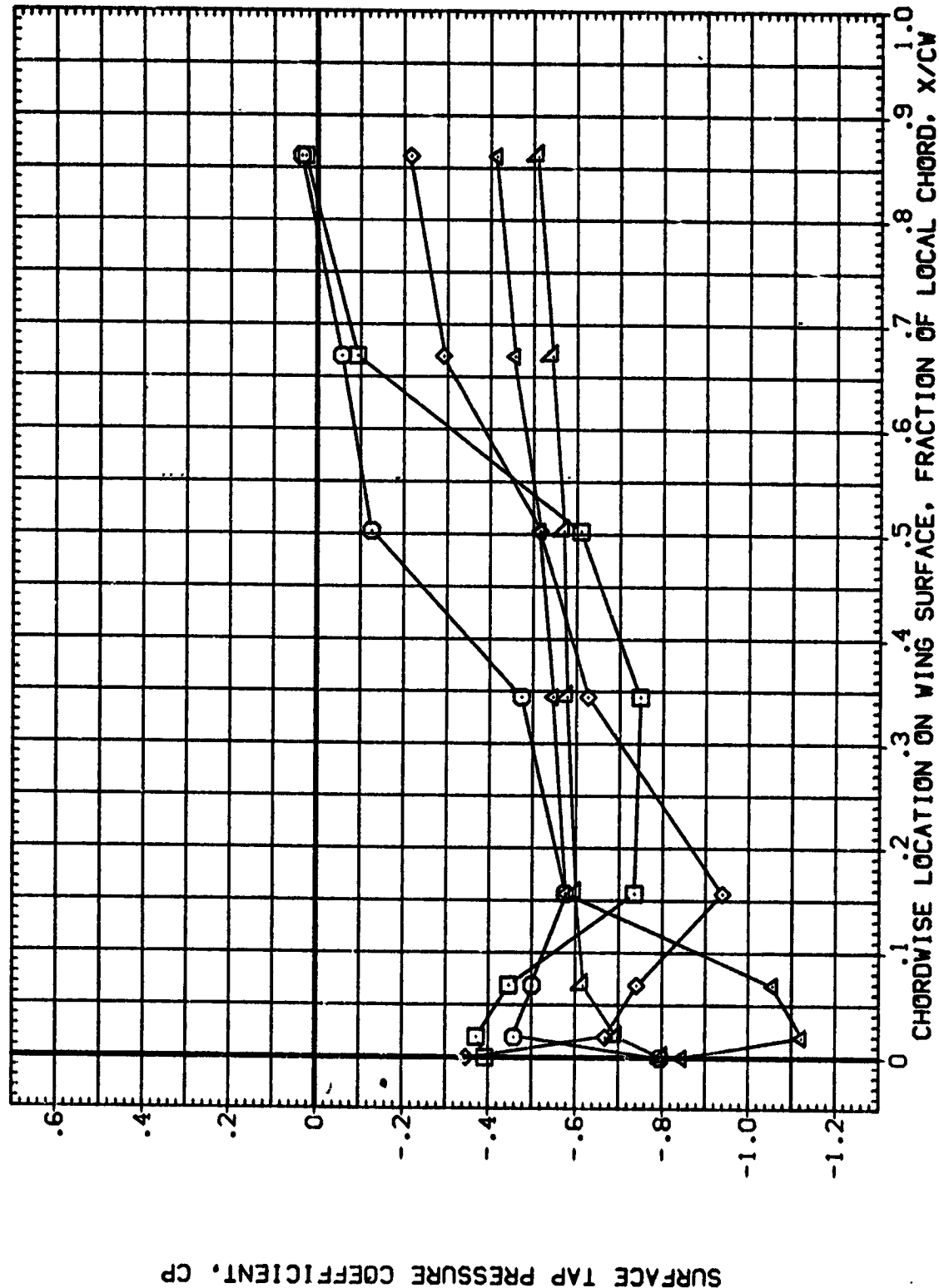


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2V/BV
 .299

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH .900

55.000
 .000
 .900

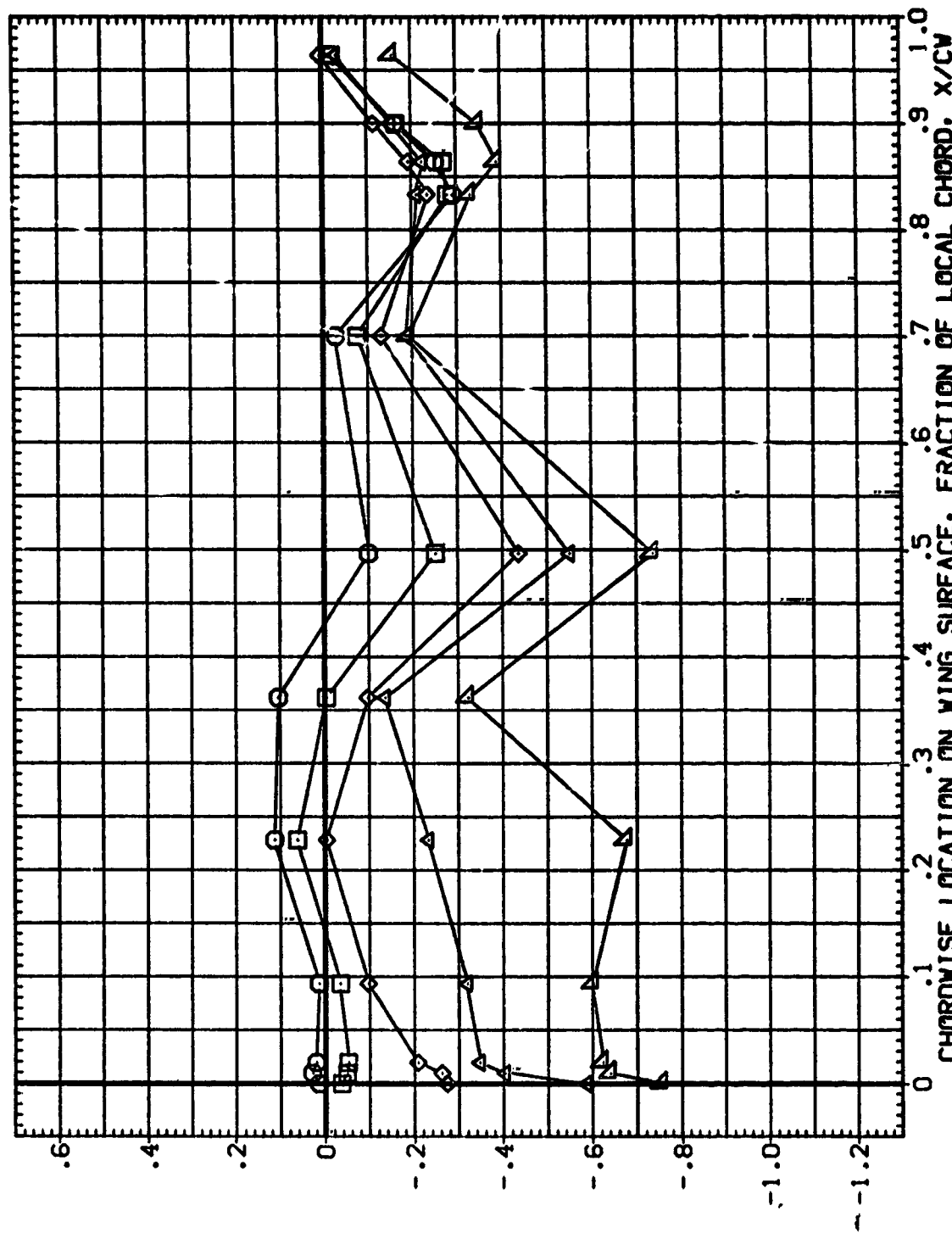


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U04)

SYMBOL
□ ◇ △ ▽

ALPHA
-4.000
-0.000
4.000
8.000
12.000

2Y/BW
.427

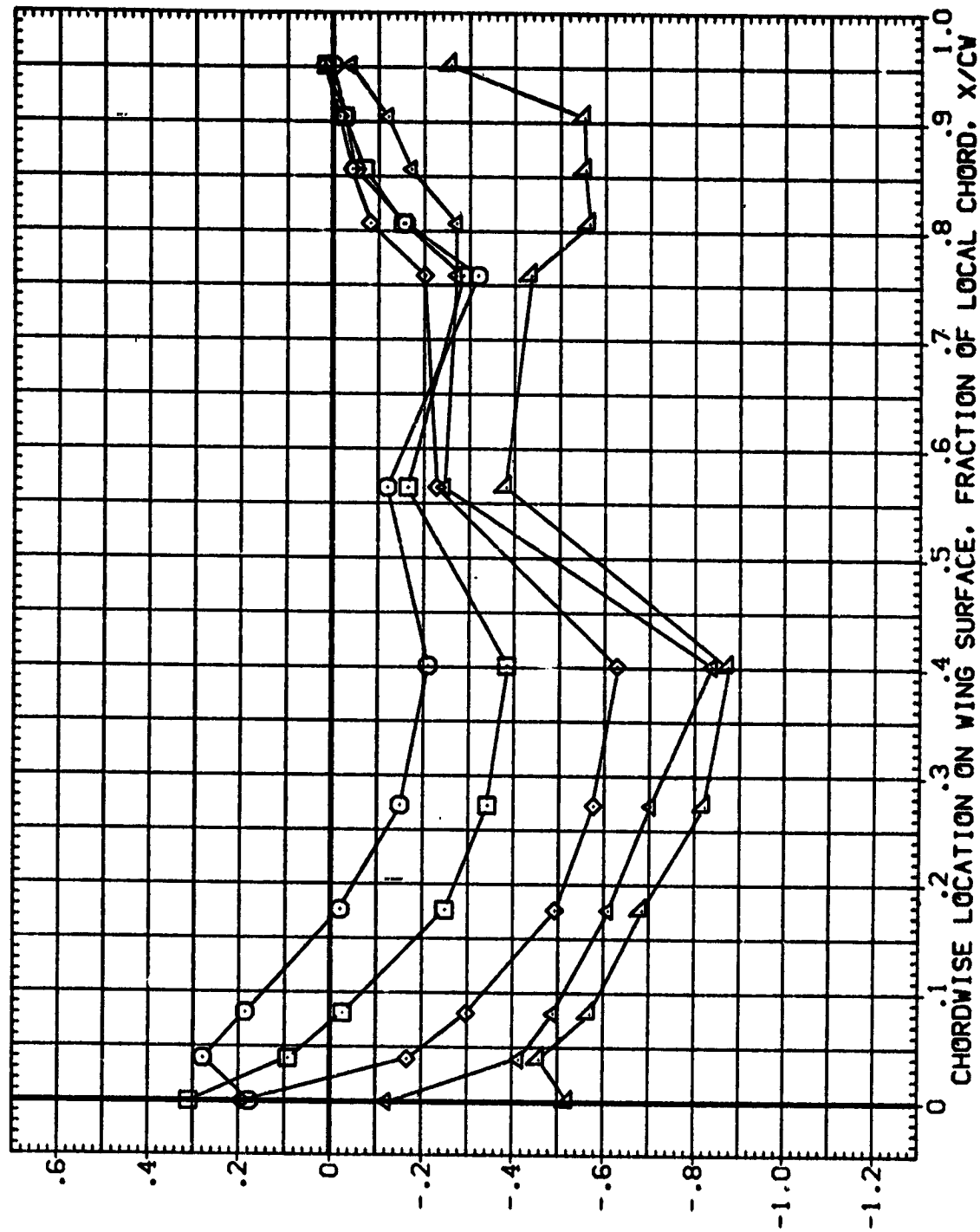
BETA
4.000

PARAMETRIC VALUES
RUDDER
BOFLAP
R-ELVN

.000
16.300
.000

SPOBRK
L-ELVN
MACH

.000
.000
.900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

SYMBOL
 ∇ \diamond \square \circ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .673

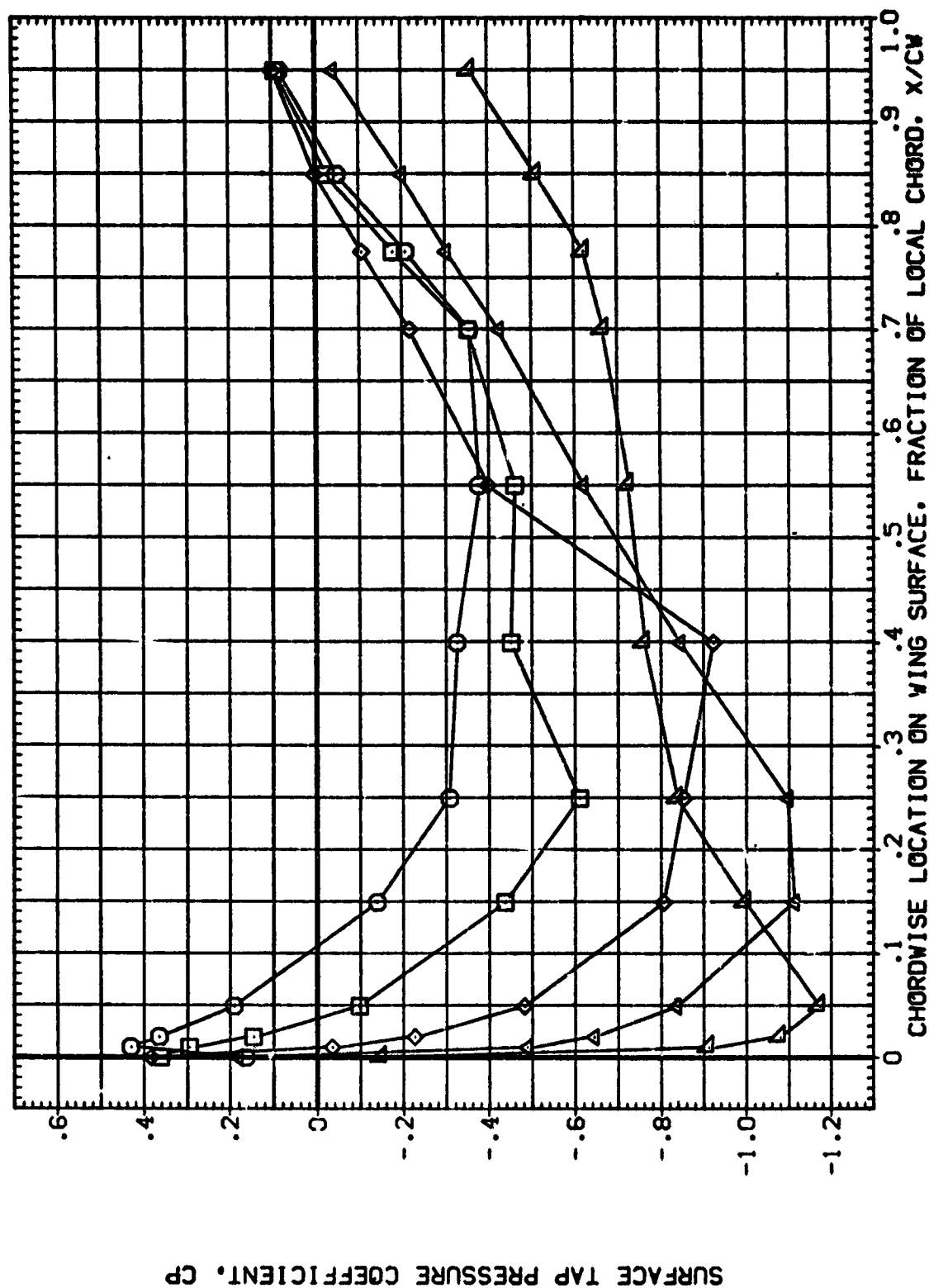
BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

SP08RX
 16.300
 .000

L-ELVN
 .000
 .900

MACH
 .000
 .000



AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

SYMBOL	ALPHA	2Y/8V	ETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.687	4.000	BDFLAP	.000 SPOBRK
□	.000			R-ELVN	.000 L-ELVN
◇	4.000				.000 MACH
△	8.000				.500
▽	12.000				

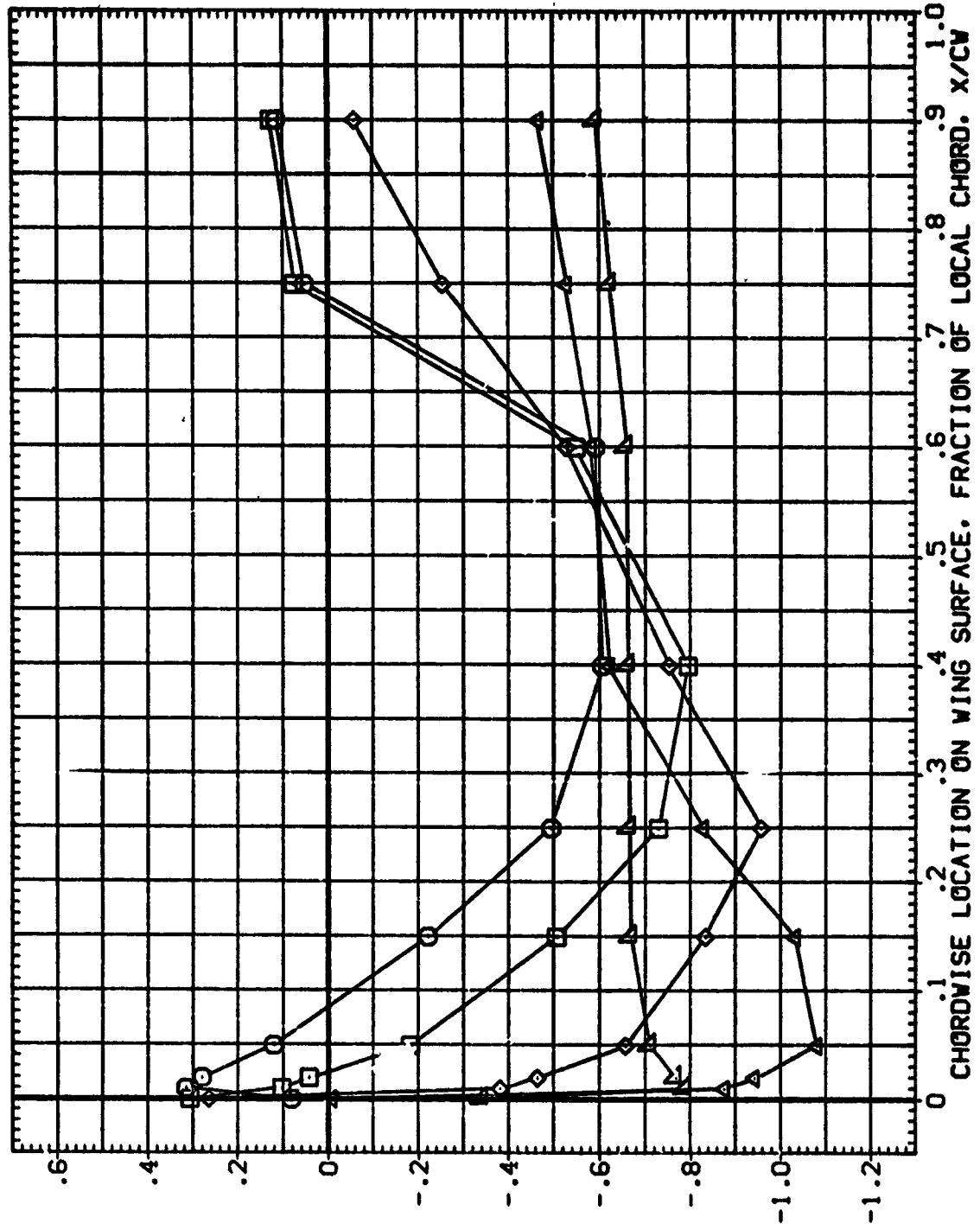


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A143) -140A/B/C/R ORB LEFT WING TOP(IE8U04)

SYMBOL
 ▽
 ◇
 ◊
 ◻
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V
 .972

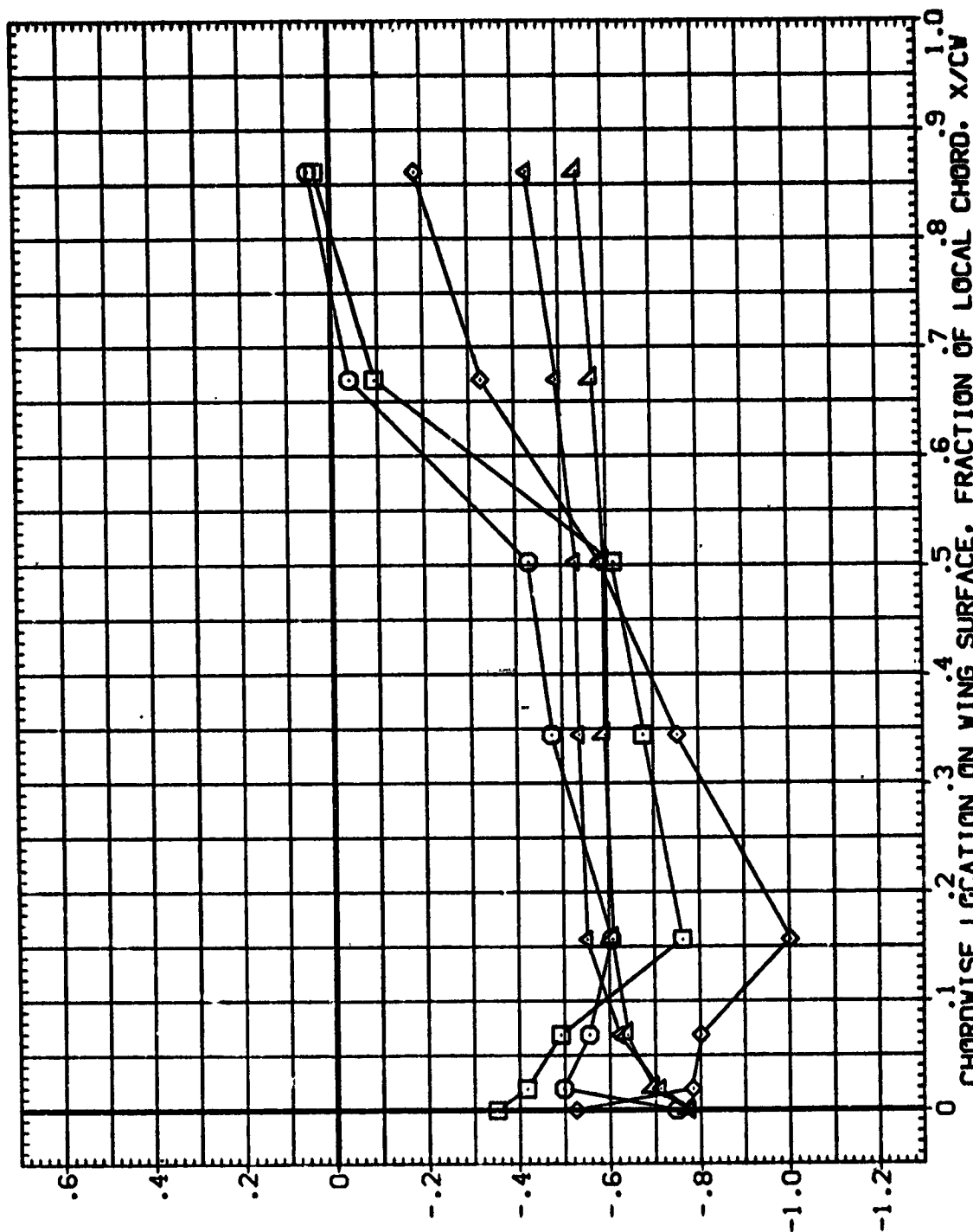
BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

SPORRK
 L-ELVN
 MACH

55.000
 .000
 .900



SURFACE TAP PRESSURE COEFFICIENT, CP

CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BV
 .299

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

SS.000
 .000
 16.300
 .000
 L-ELVN
 .000
 1.100
 MACH

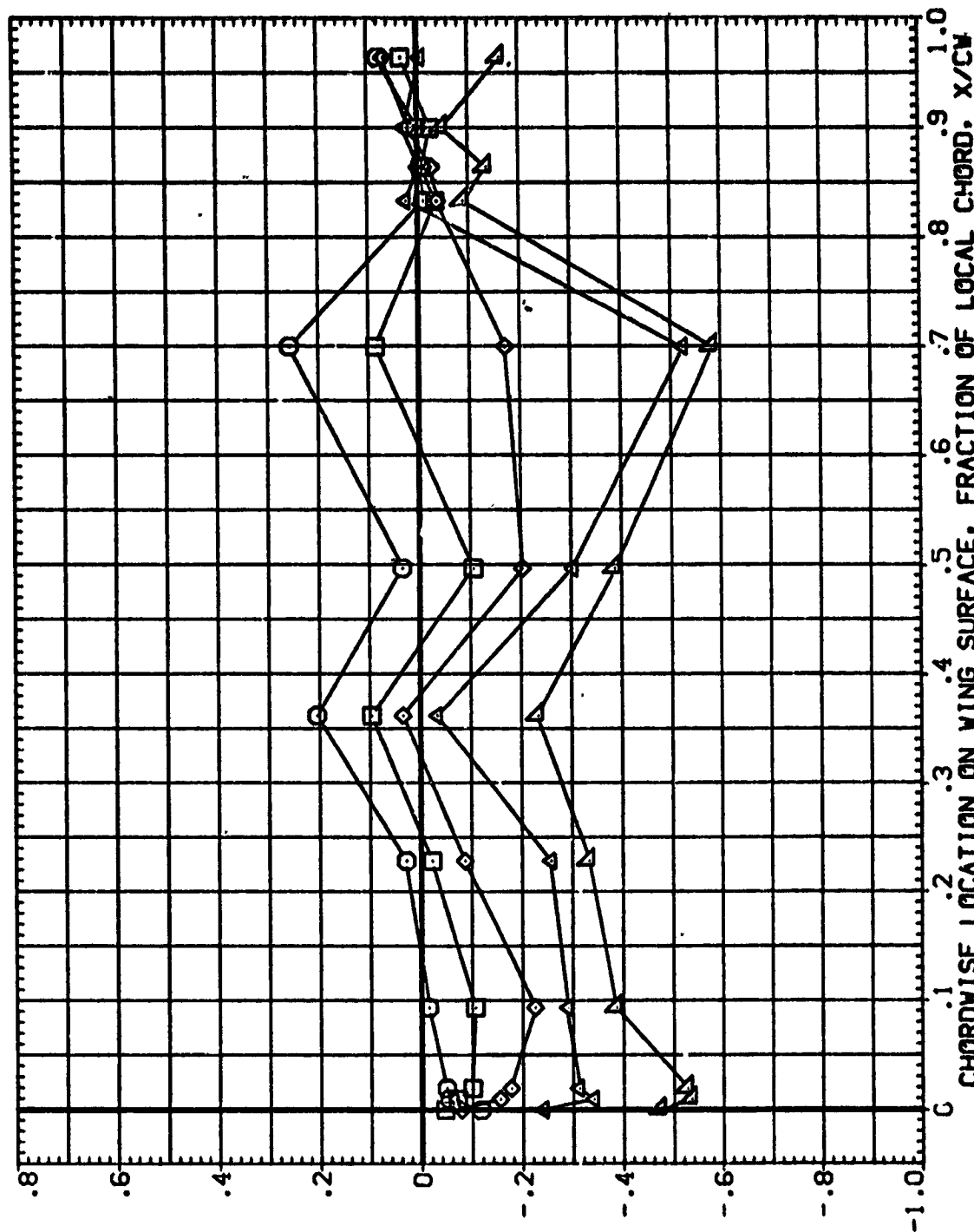


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL

ALPHA

2Y/8V

BETA

-4.000

.000

4.000

8.000

12.000

.427

-4.000

PARAMETRIC VALUES

RUDDER

80FLAP

R-ELVN

.000

.000

.000

SP08RT

L-ELVN

MACH

55.000

.000

1.100

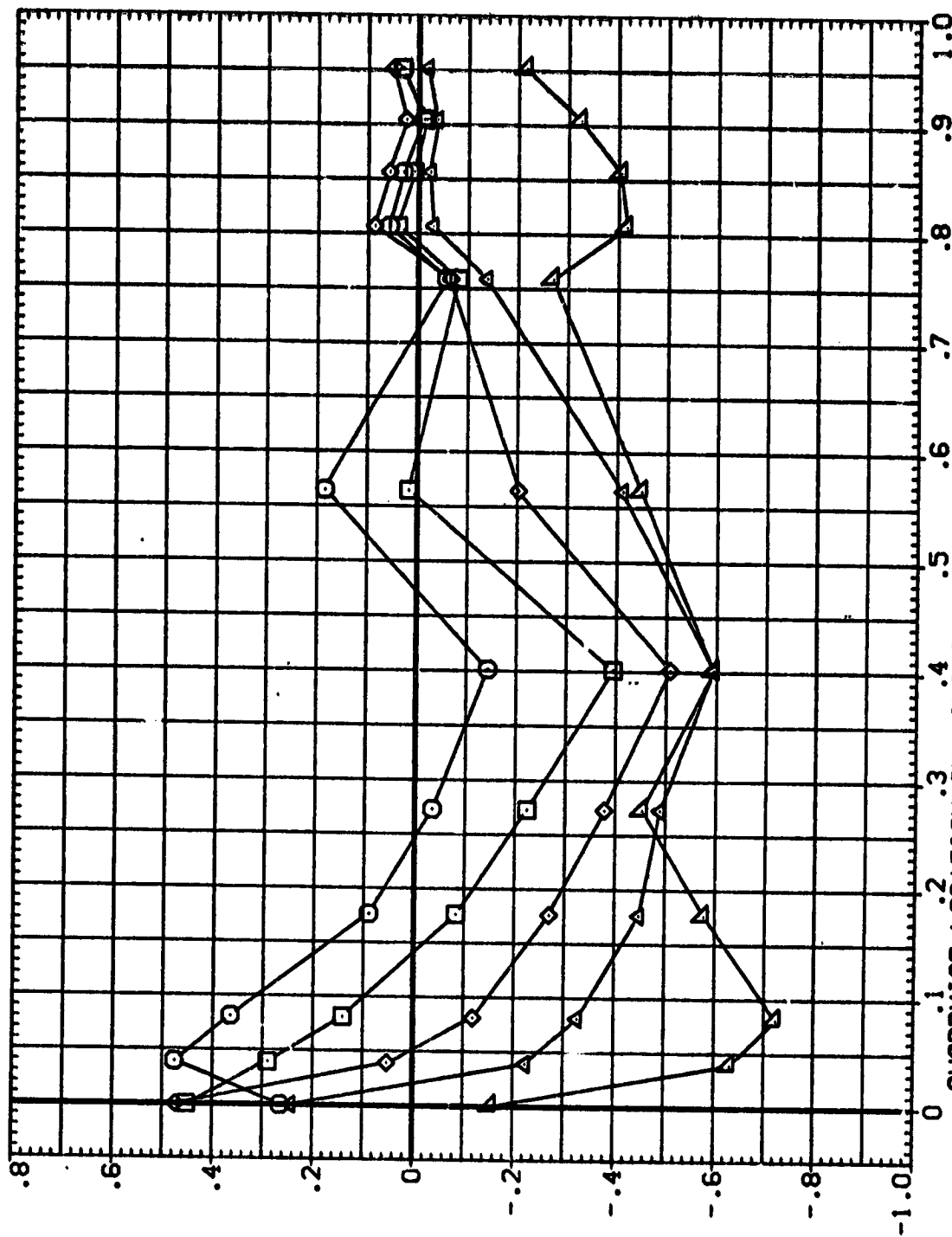


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U03)

SYMBOL	ALPHA	2Y/8V	BETA	RUDDER	PARAMETRIC VALUES		
○	-4.000	.673	-4.000	80FLAP	.000	SP08RX	55.000
□	.000			R-ELVN	16.300	L-ELVN	.000
◇	4.000				.000	MACH	1.100
△	8.000						
▽	12.000						

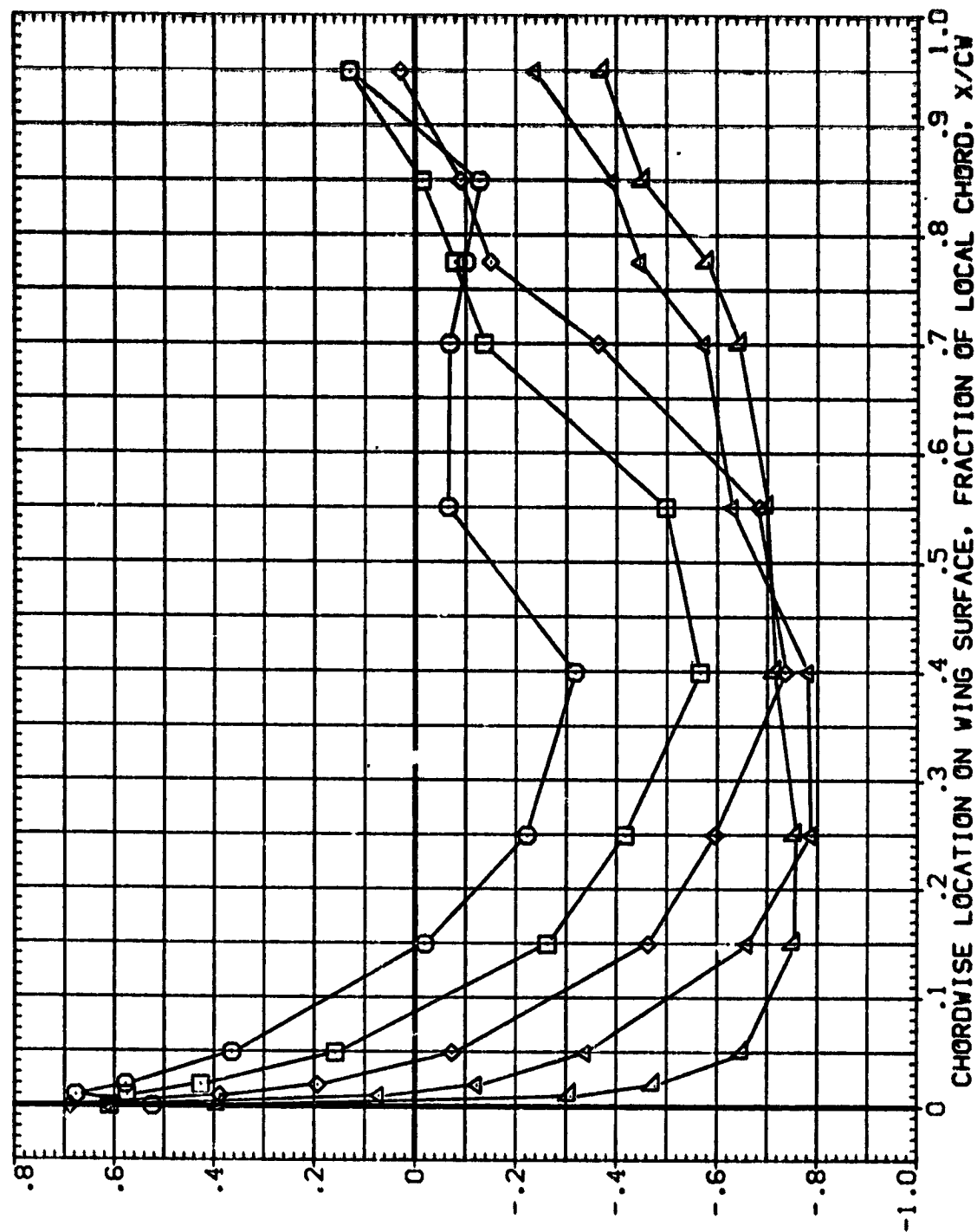


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .887

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDBRK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

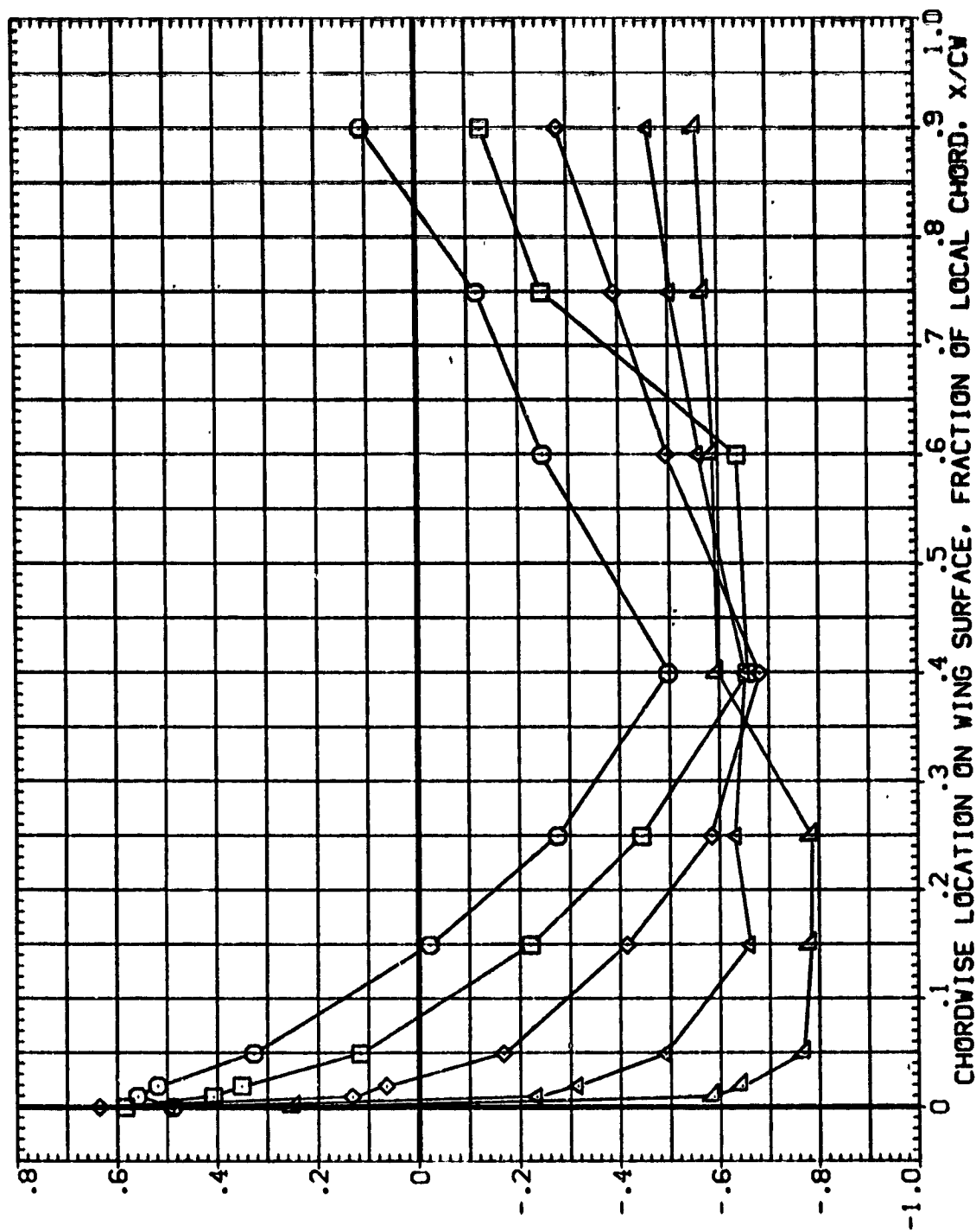


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U03)

SYMBOL	ALPHA		2Y/BV		BETA		PARAMETRIC VALUES			
	-4.000	.000	.972	-4.000	R-ELVN	BOFLAP	.000	SPDRX	55.000	
○	4.000				R-ELVN		16.300	L-ELVN	.000	
□	8.000						.000	MACH	1.100	
◇	12.000									
△										

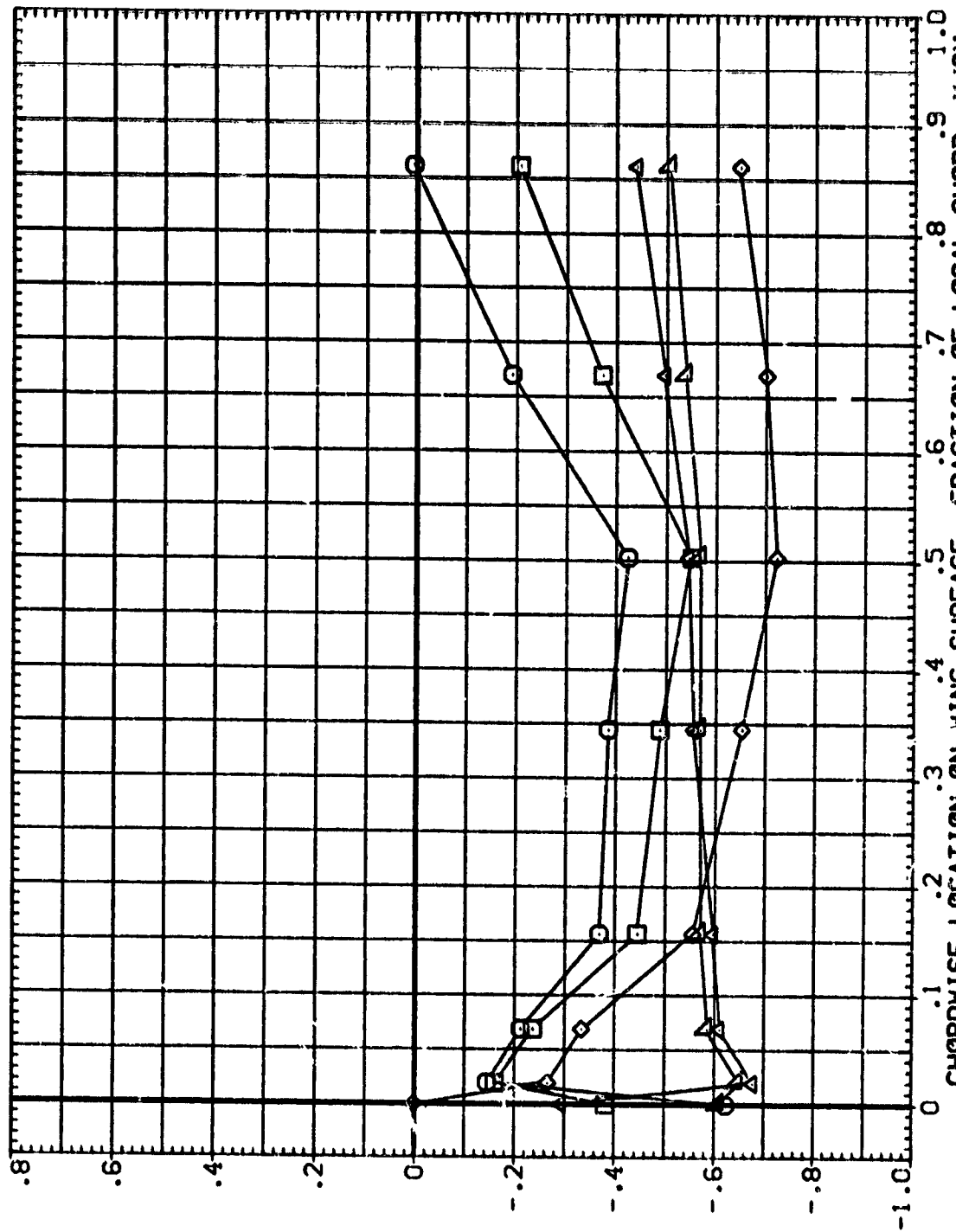


FIG. 11 LEFT WING TOP SURFACE ELEVEN DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

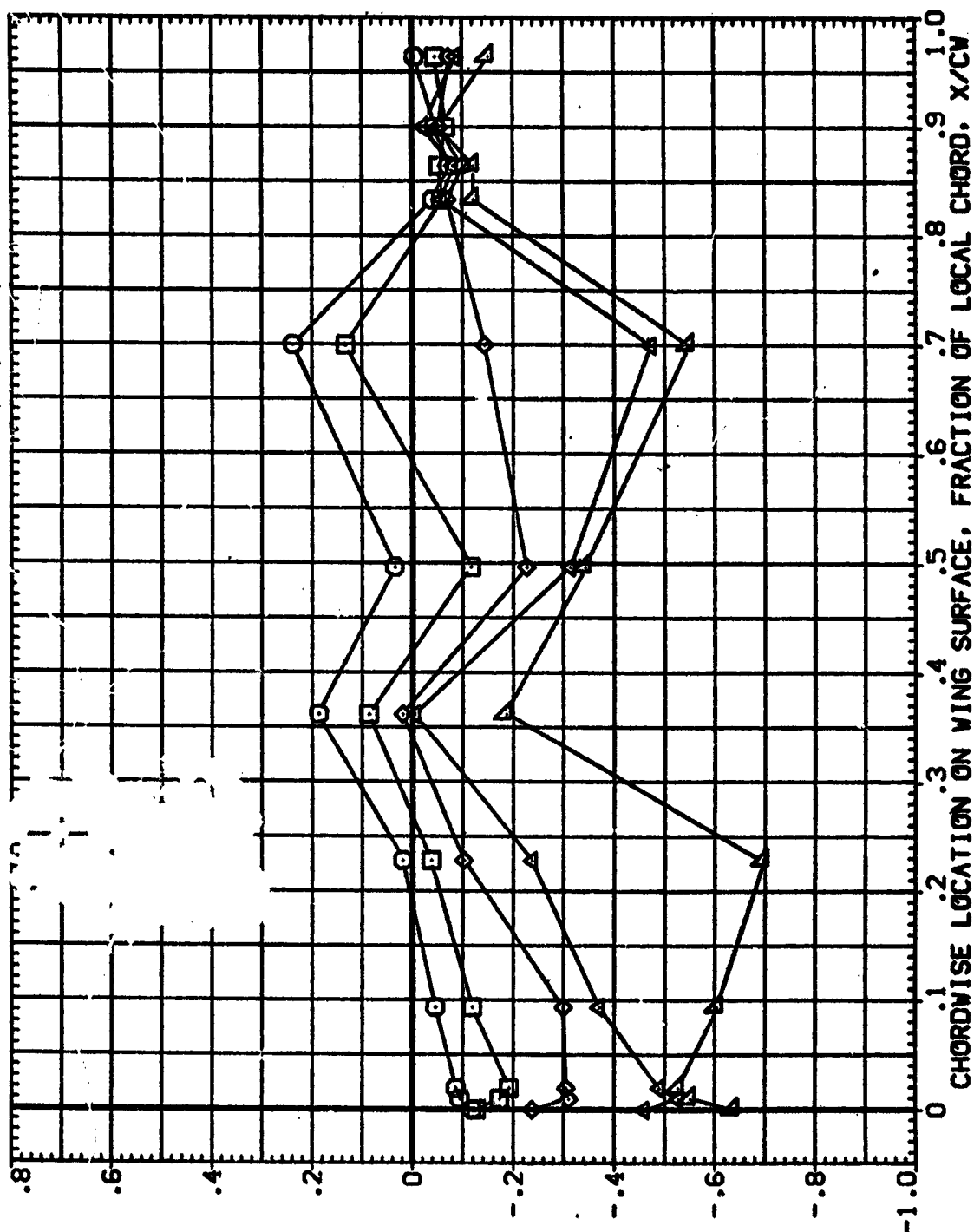
2Y/BV
 .259

BETA
 .000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

55.000
 .000
 1.100



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

C-6

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
○	-4.000	.427	.000	RUDDER
□	.000			BOFLAP
◇	4.000			R-ELVN
△	8.000			L-ELVN
▽	12.000			MACH
				35.000
				.000
				1.100

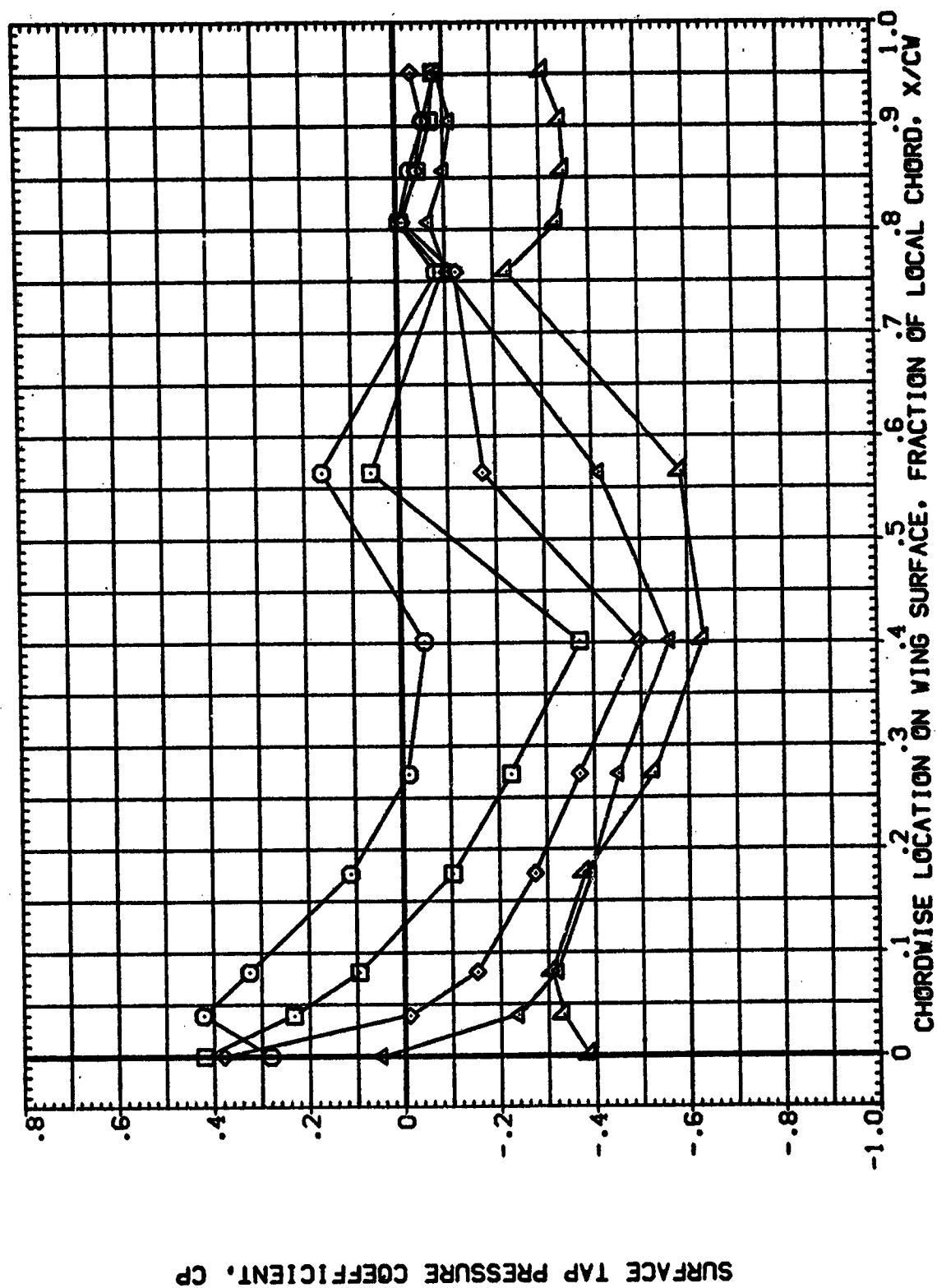


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/8N .673

BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

55.000
 .000
 1.100

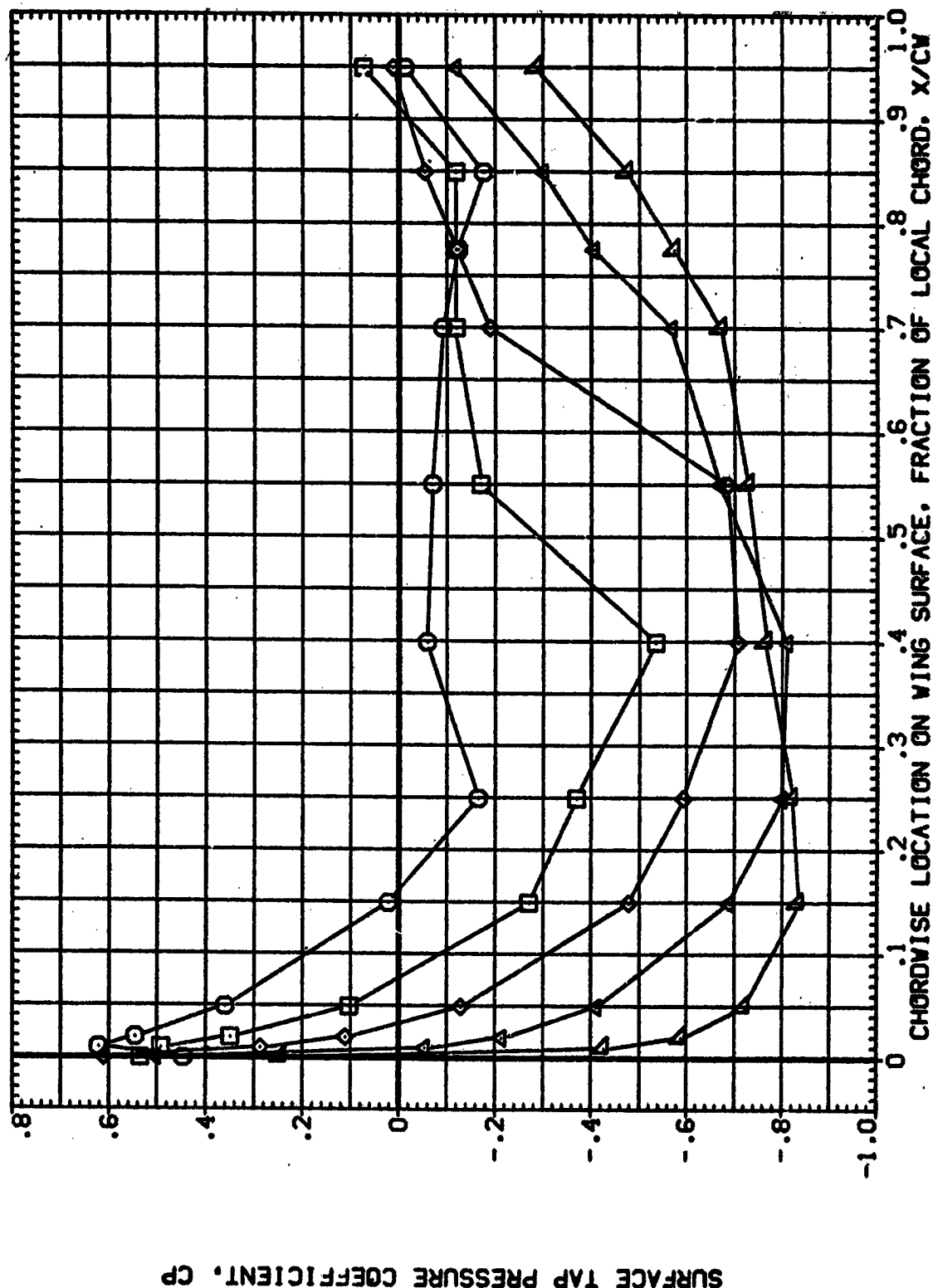


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.887	.000	BOFLAP	.000
◇	4.000			R-ELVN	.000
□	8.000				16.300
△	12.000				.000
					1.100

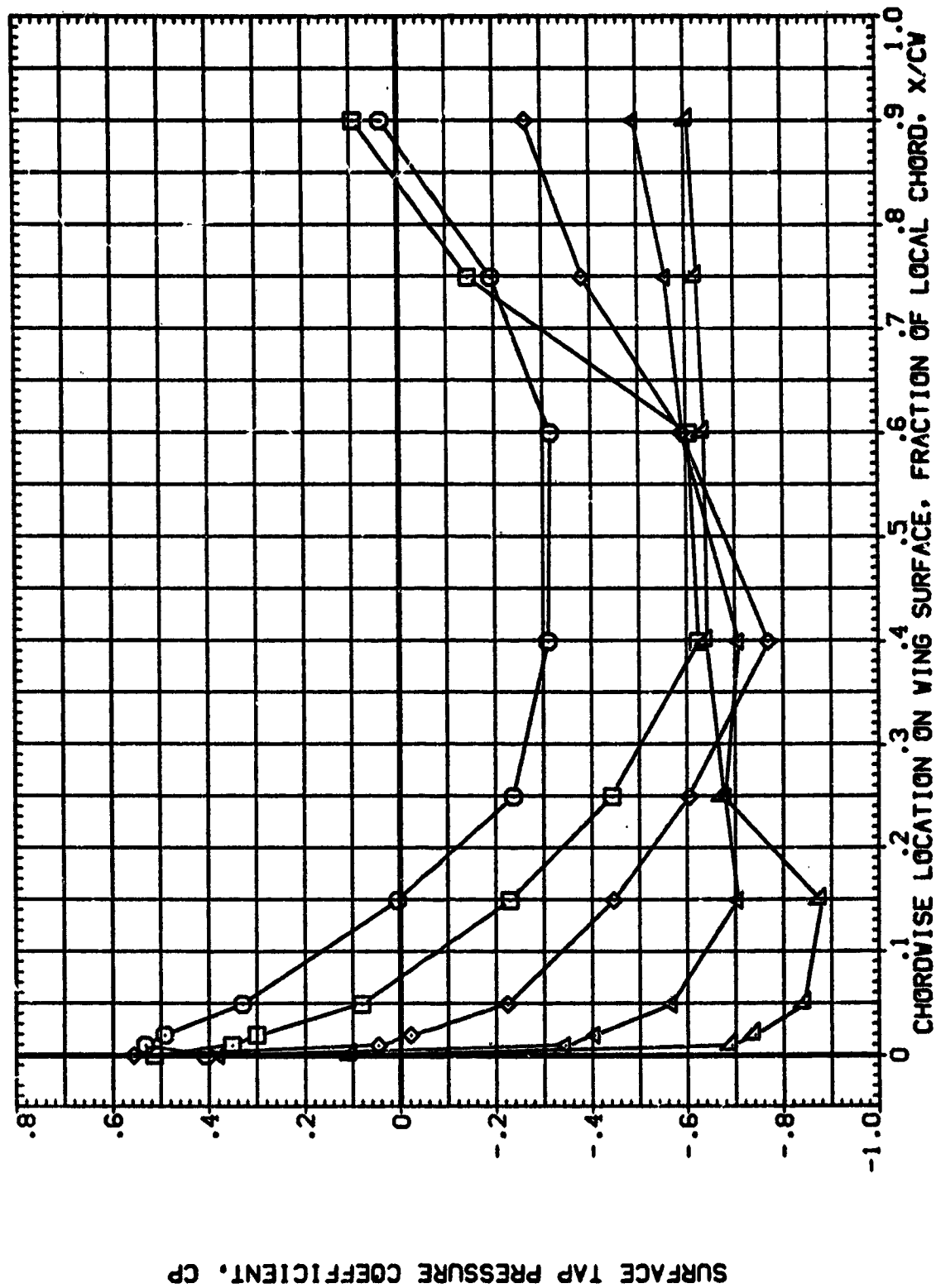


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2V/BV .972 BETA .000

RUDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 .000 .000 55.000
 16.300 L-ELVN
 .000 MACH 1.100

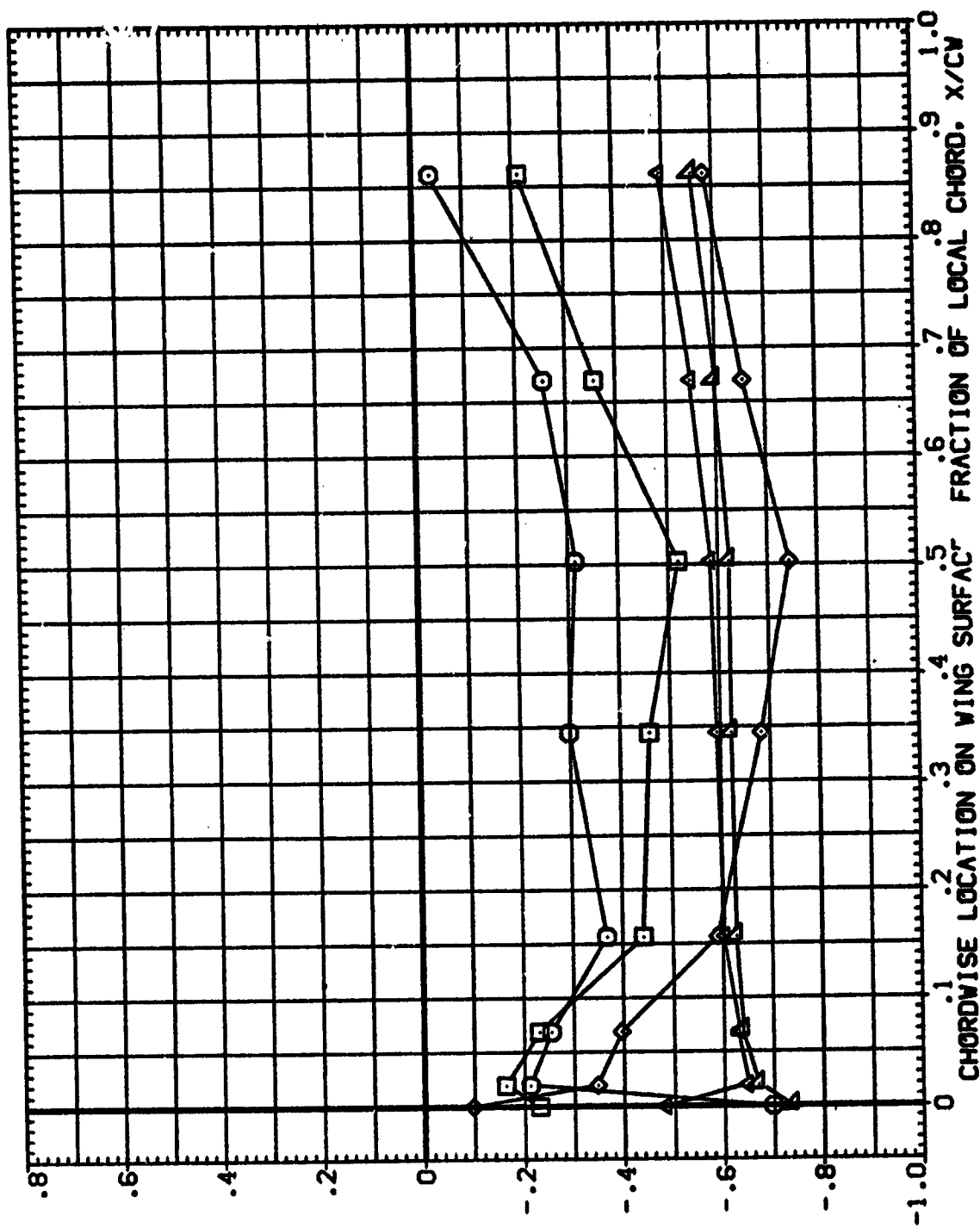


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL	ALPHA	2 γ /BN	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.259	4.000	80FLAP	.000 SPOBRK
□	.000			R-ELVN	16.300 L-ELVN
◇	4.000				.000 MACH
△	8.000				
▽	12.000				
					55.000
					.000
					1.100

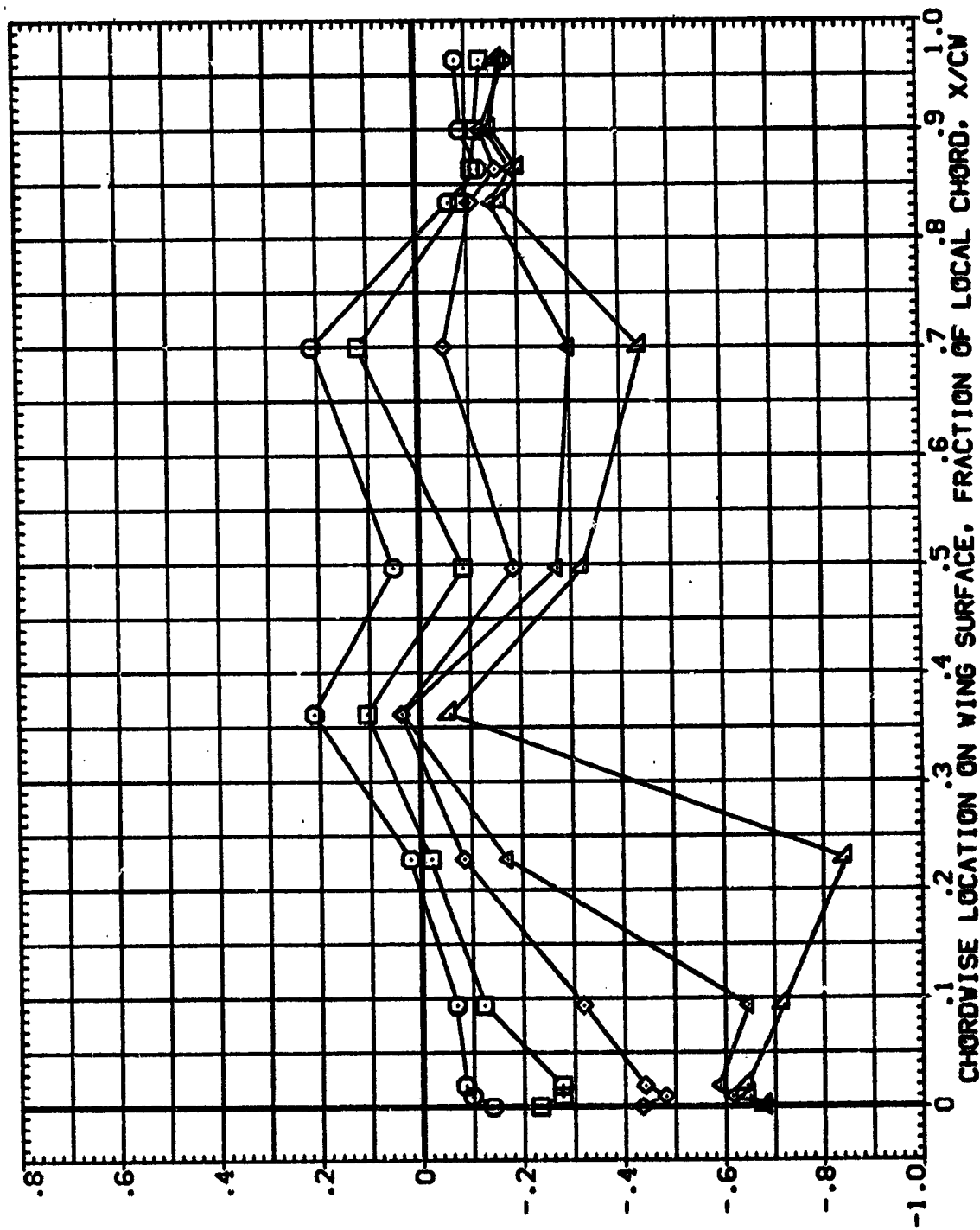


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U03)

SYMBOL	ALPHA	ZI/BN	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.427	4.000	80FLAP	.000 SP080K
◇	.000			R-ELVN	.000 L-ELVN
□	4.000				.000 MACH
△	8.000				1.100
▽	12.000				

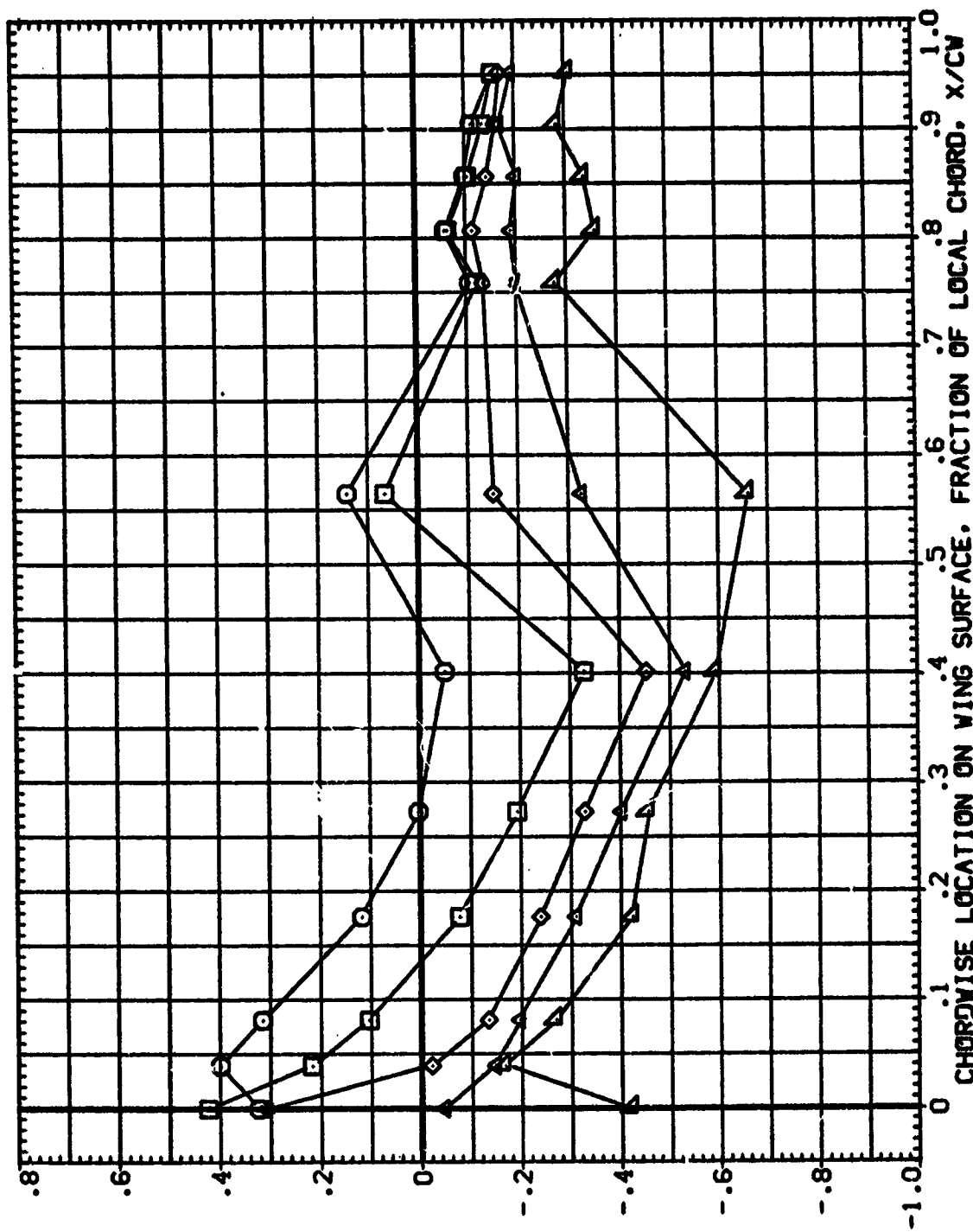


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-973(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .673
 BETA 4.000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPDBRK 55.000
 16.300 L-ELVN .000
 .000 NACH 1.100

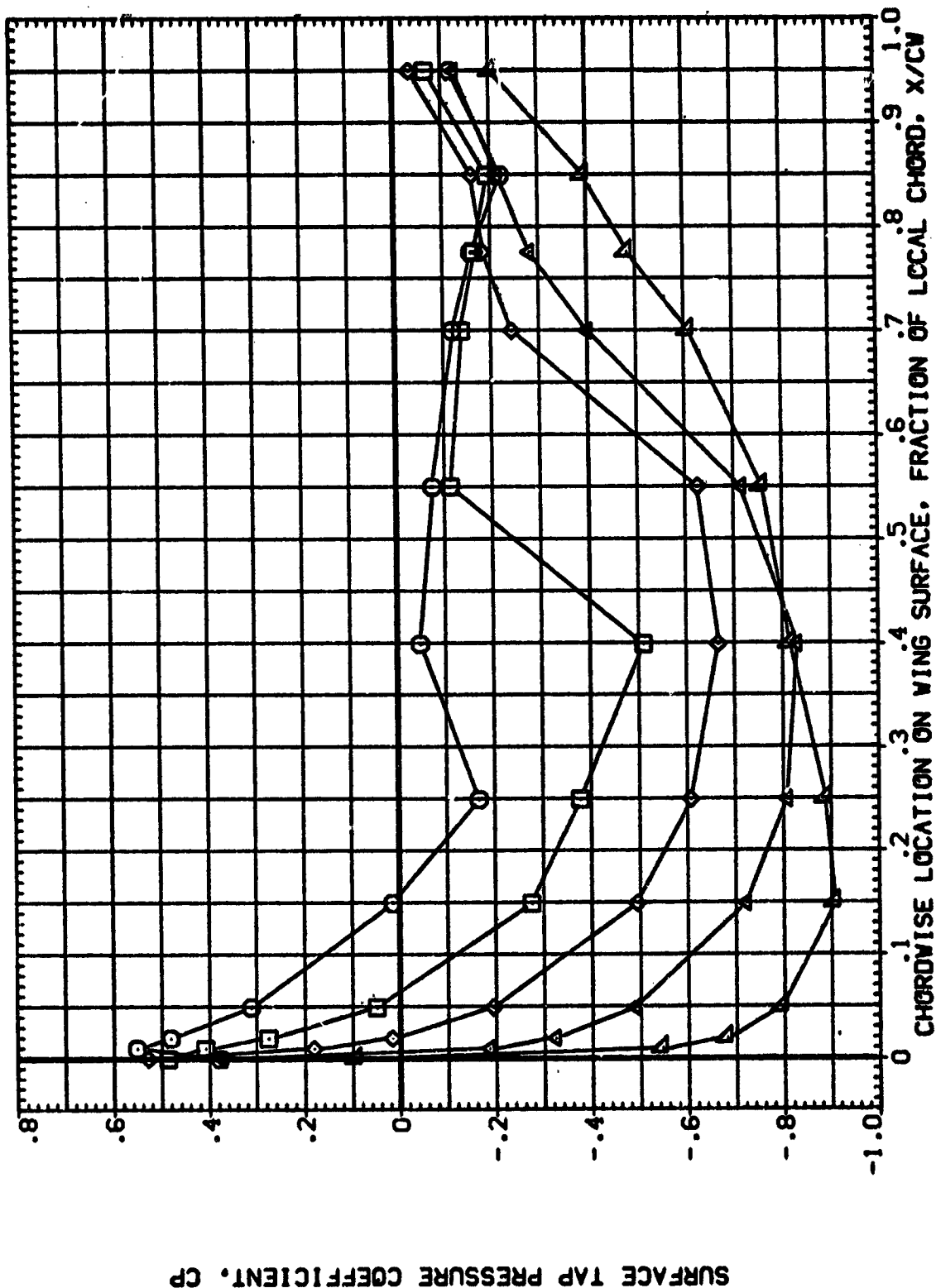


FIG. 11 LEFT WING TOP SURFACE ELEVEN DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BN
 .667

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100

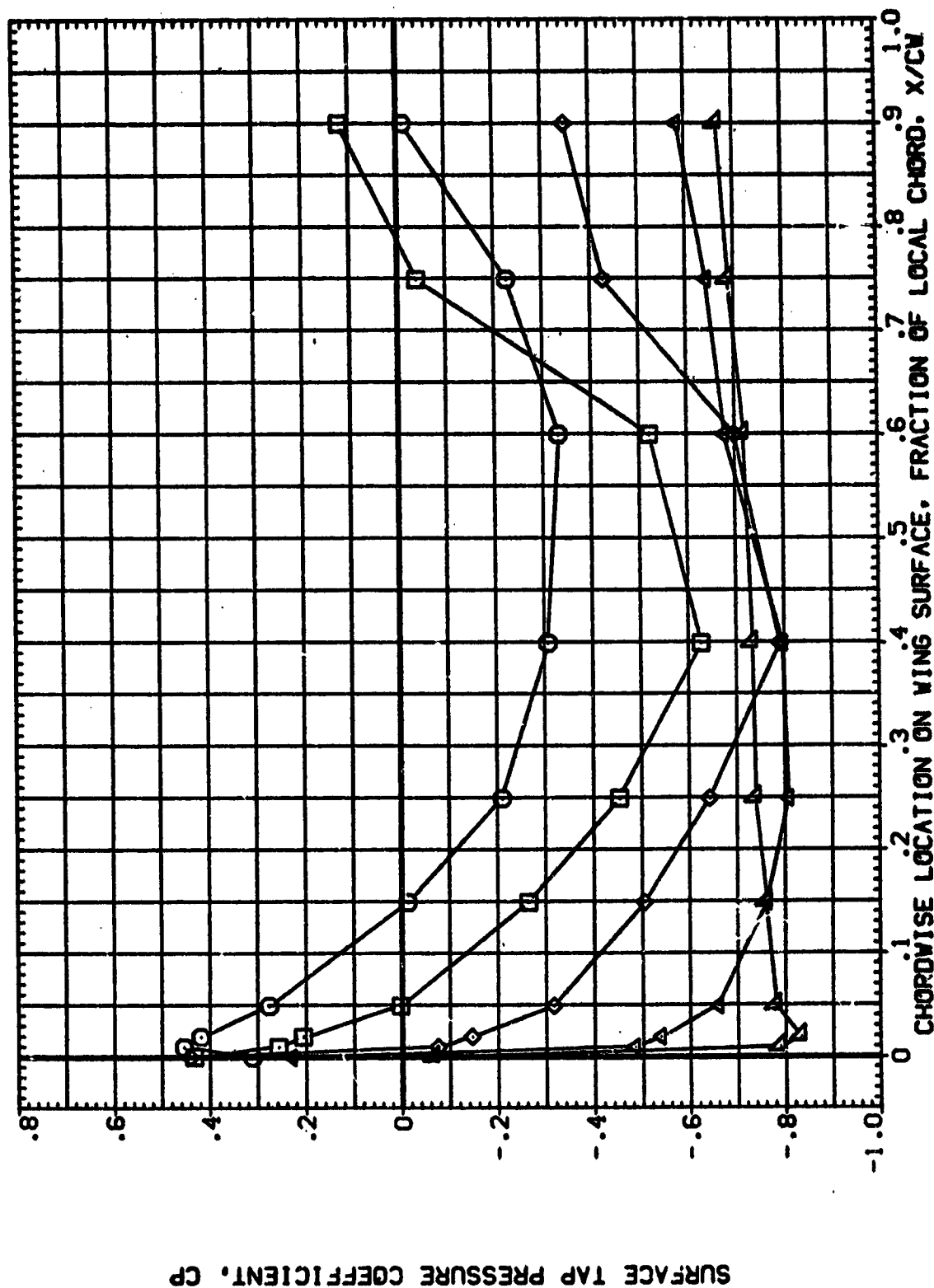


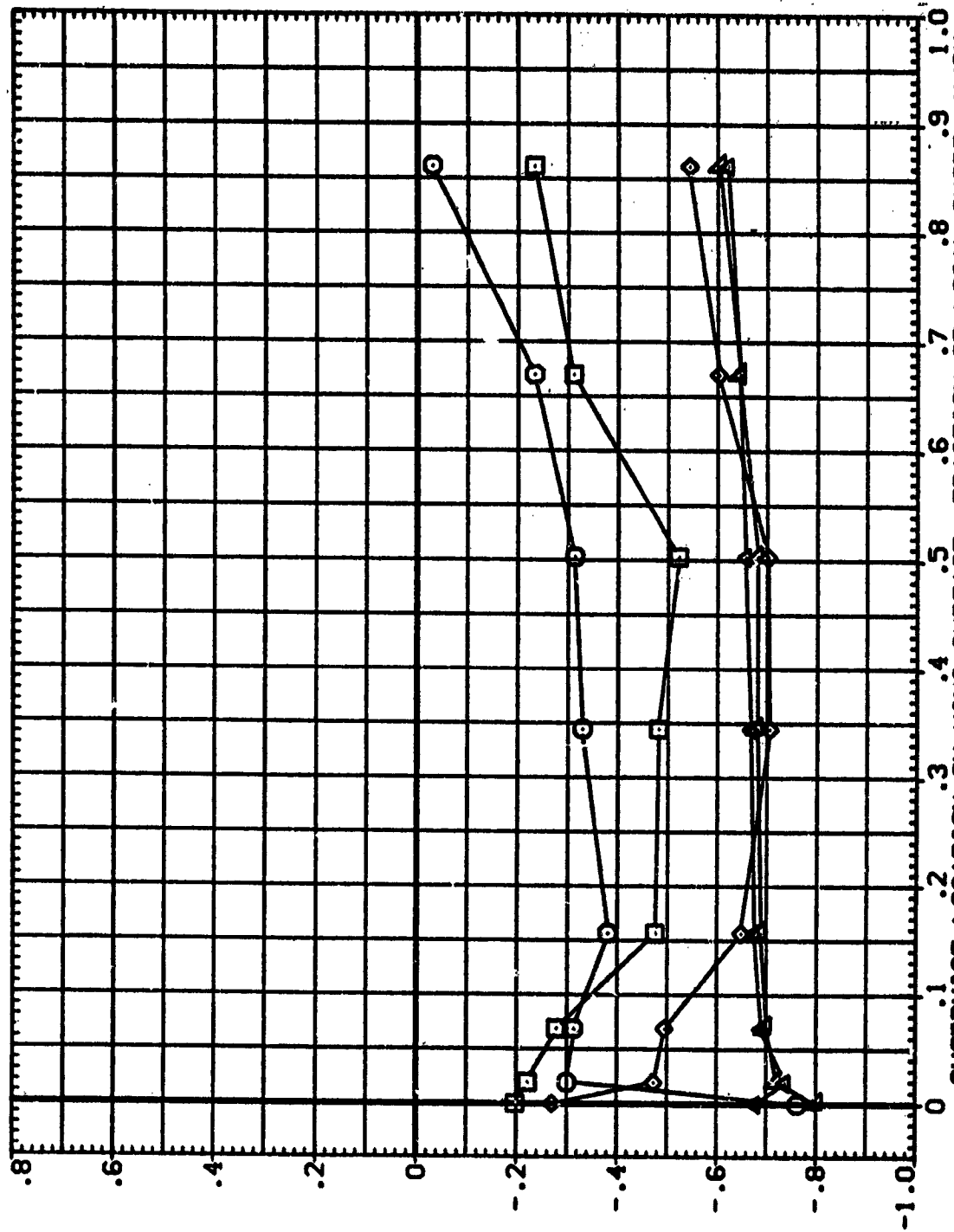
FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U03)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA 27/8W BETA
 -4.000 .972 4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 80FLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.100



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPEED 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

SYMBOL ALPHA 2T/8V BETA
 ▽ 4.000 -4.000
 ◊ 8.000
 □ 12.000

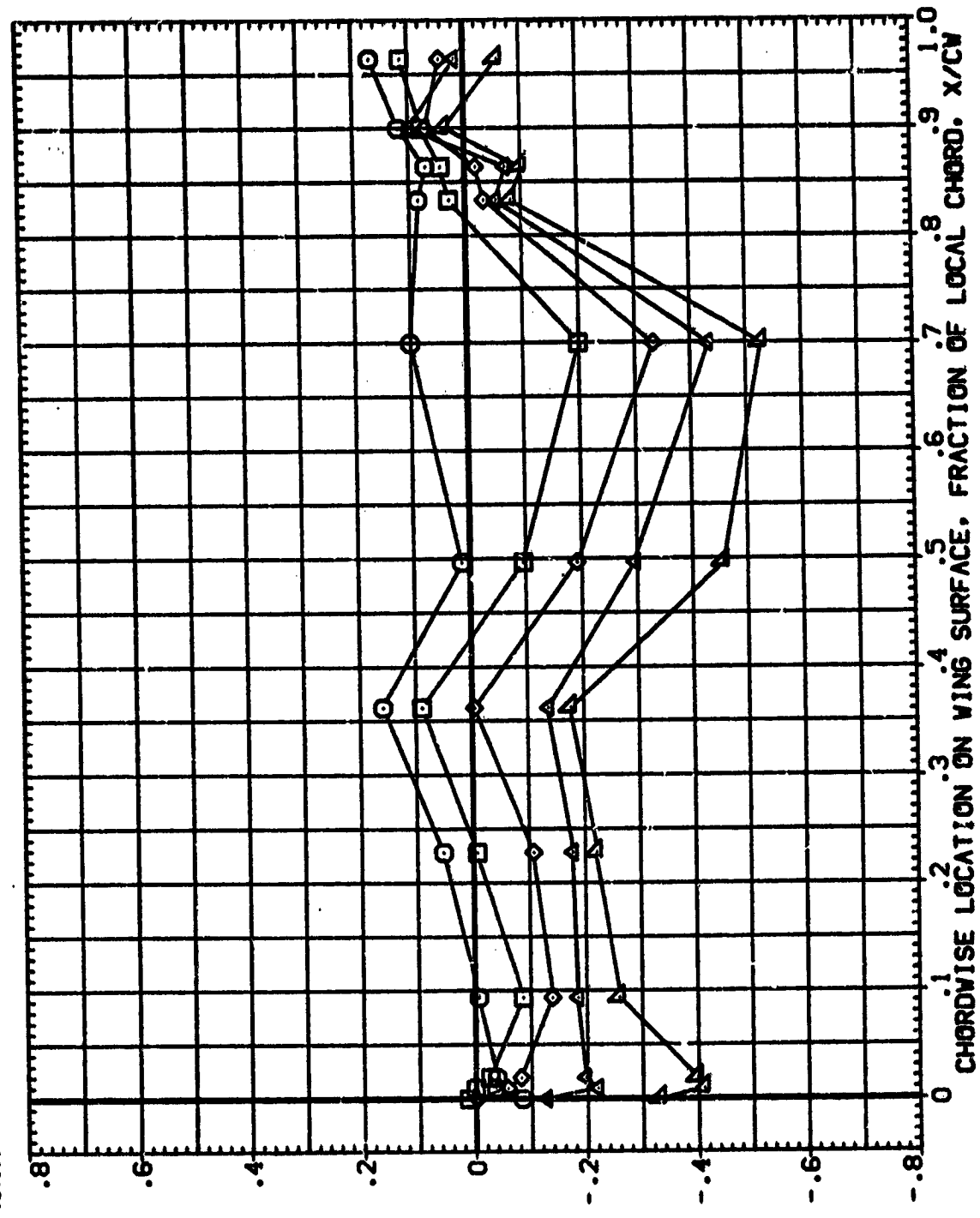


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U02)

SYMBOL
 ∇ \diamond \square \circ

α -P/N
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .427
 BETA -4.000

PARAMETRIC VALUES
 RUDE: .000 SPDRK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

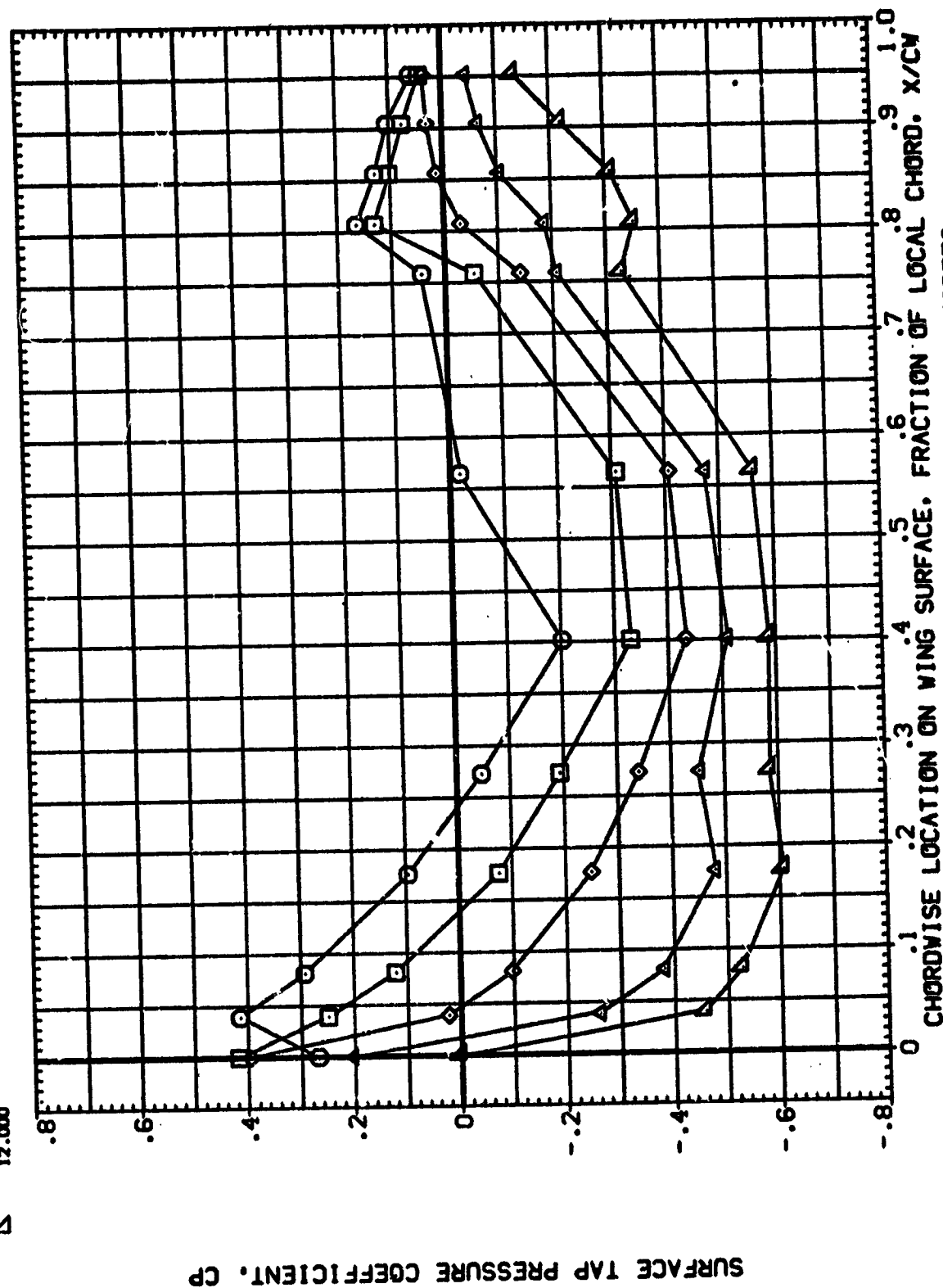


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL
 ▽ ◆ □ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BN
 .573

8°A
 -4.000

RUDER
 ED/FLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPDBRK
 16.300 L-ELVN
 .000 MACH
 1.250

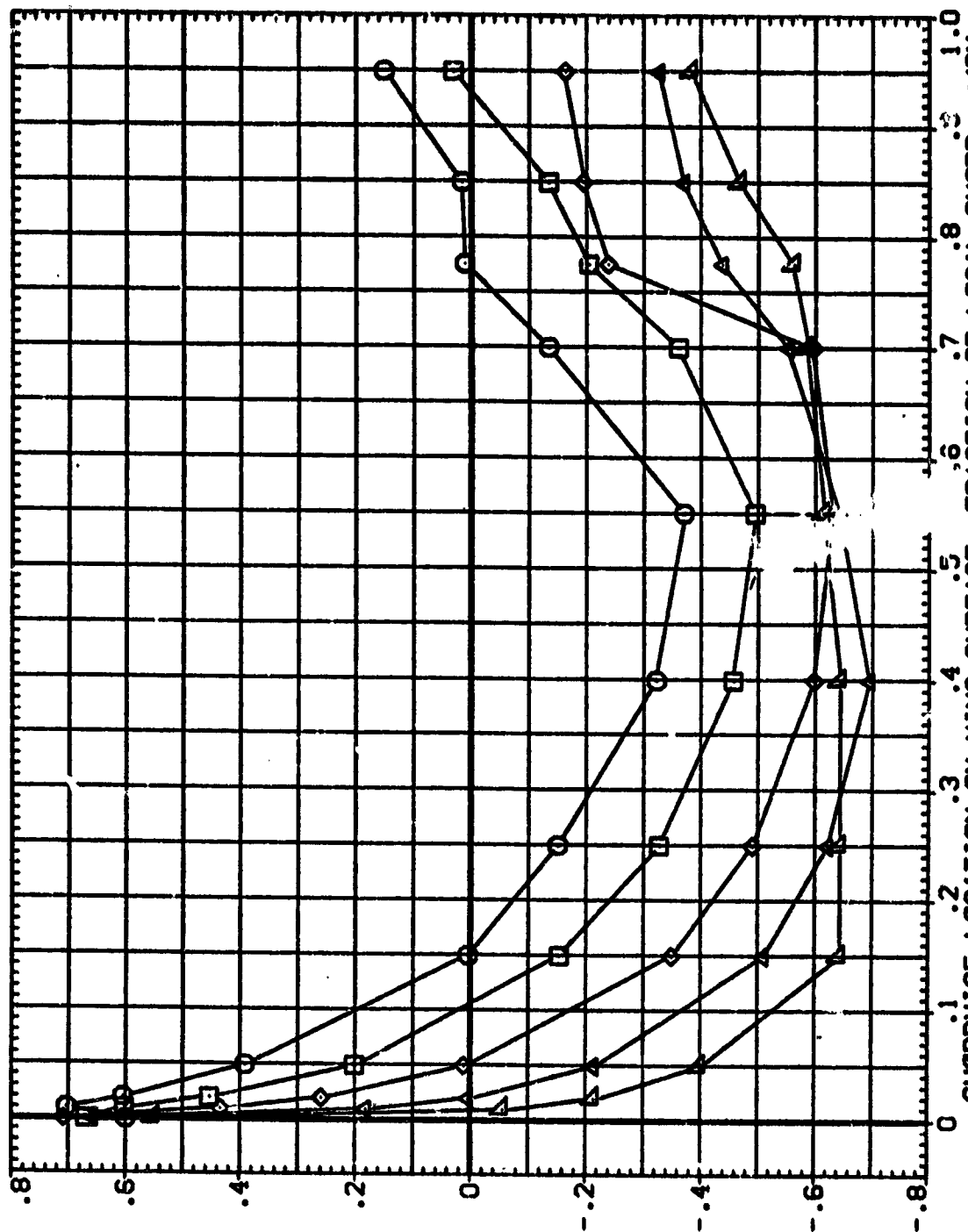


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION ANGLES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U02)

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

ALPHA 21/8N BETA
 -4.000 .887 -4.000

SYMBOL
 7 4 3 2 1
 ○ □ ◇ △

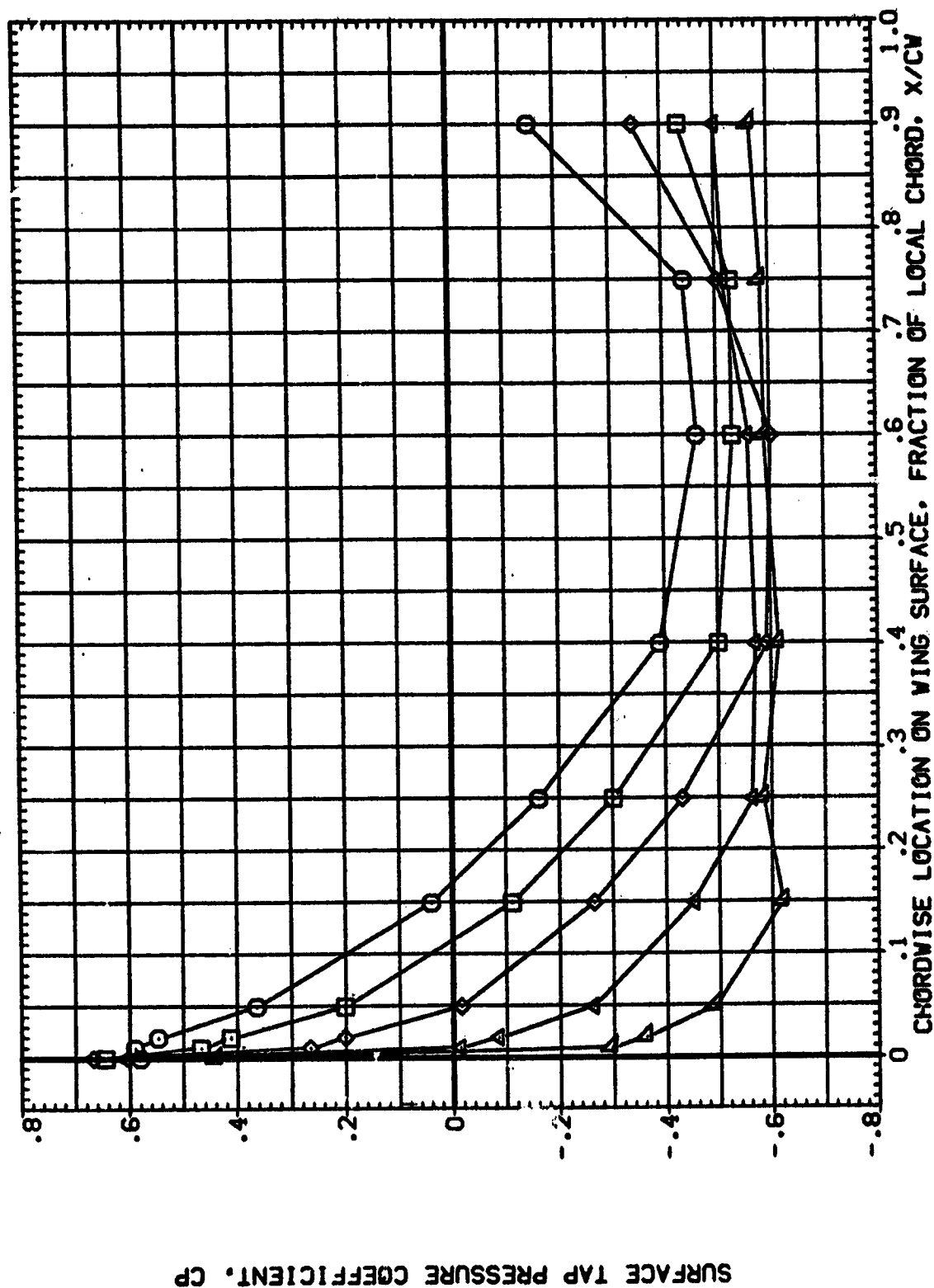


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL
 ○
 □
 ◇
 △

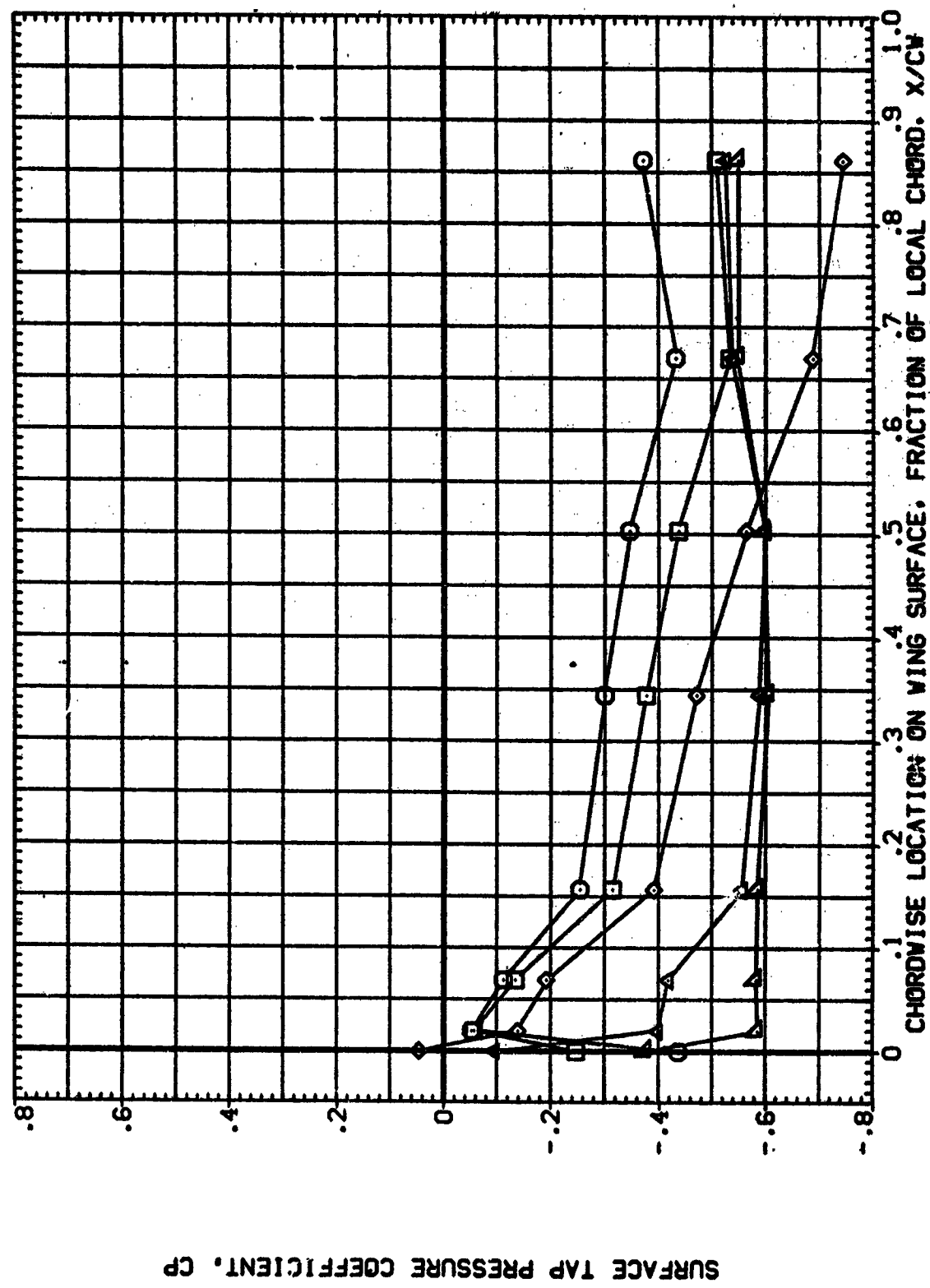
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZT/BN
 .972

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 .000
 16.300
 .000

SPOSRK
 .000
 L-ELVN
 MACH
 1.250



AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/SN .298
 BETA .000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPDRK 55.000
 16.300 L-ELVN .000
 .000 MACH 1.250

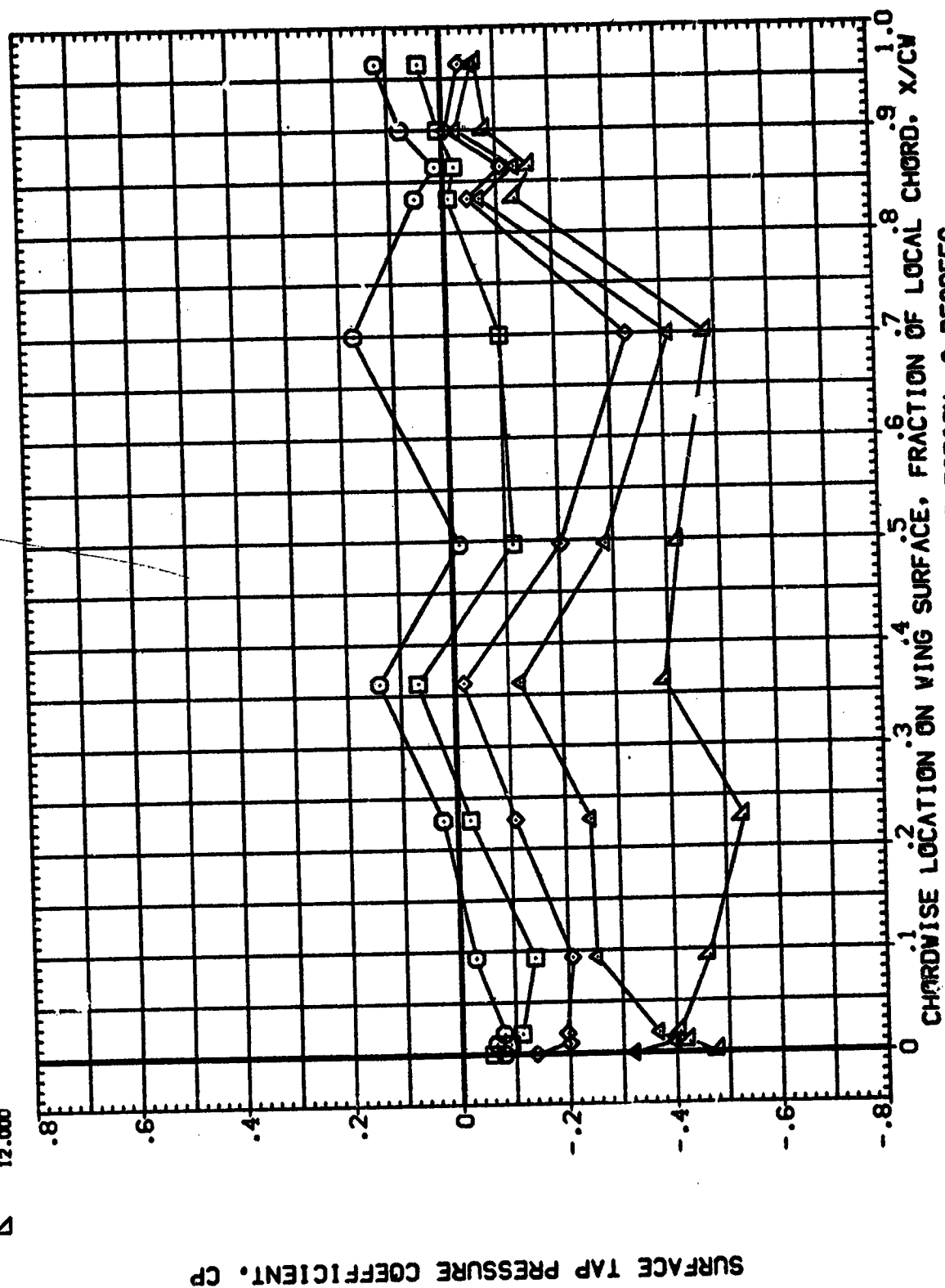


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .427

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

.000
 16.300
 .000

SPDRK
 L-ELVN
 MACH

55.000
 .000
 1.250

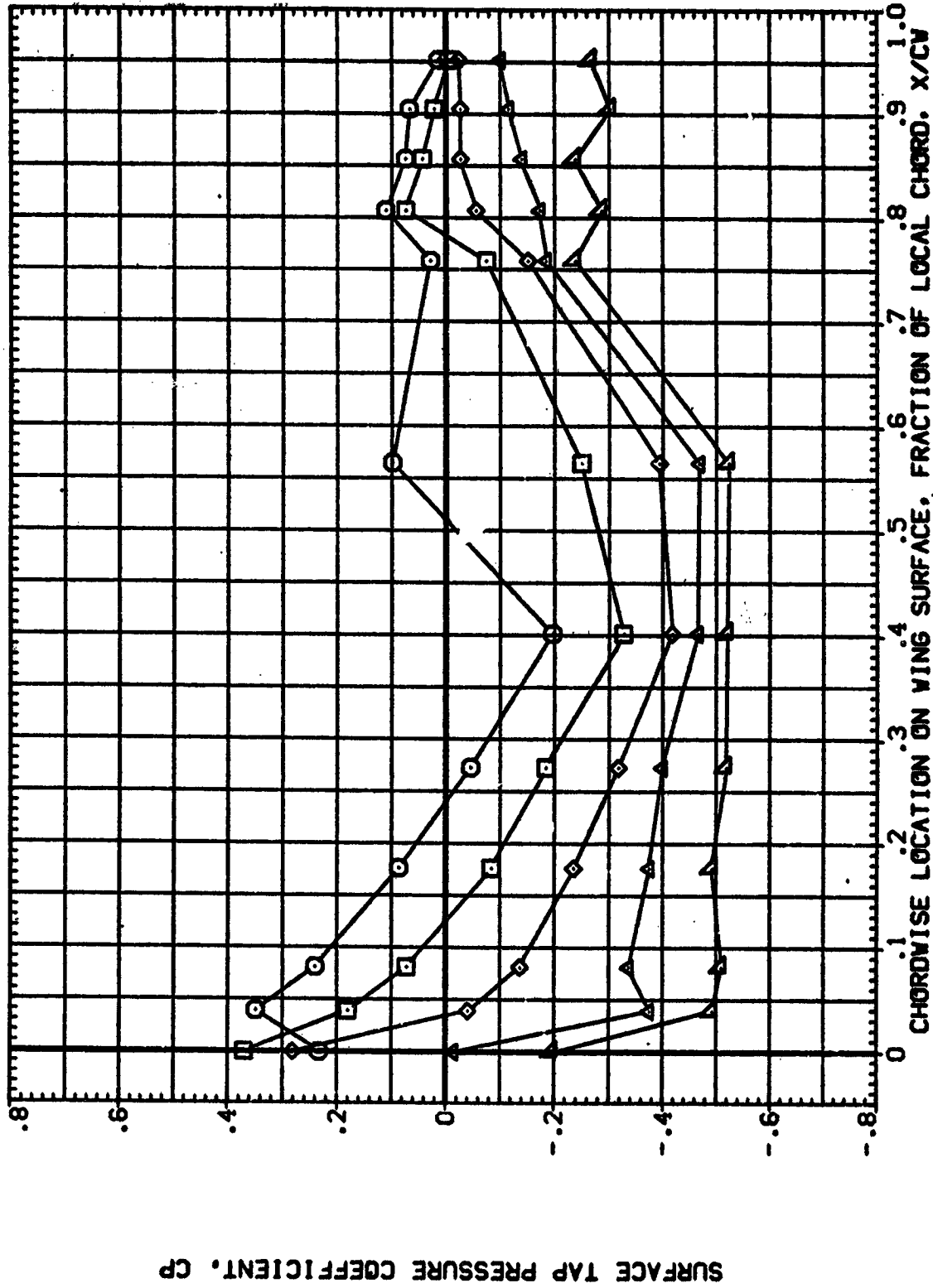


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A14R) -140A/B/C/R ORB LEFT WING TOP(1E8U02)

SYMBOL
 ∇ \diamond \square \circ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BN
 .573

BETA
 .000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES
 .000
 16.300
 .000

SPDRN
 L-ELVN
 MACH
 55.000
 .000
 1.250

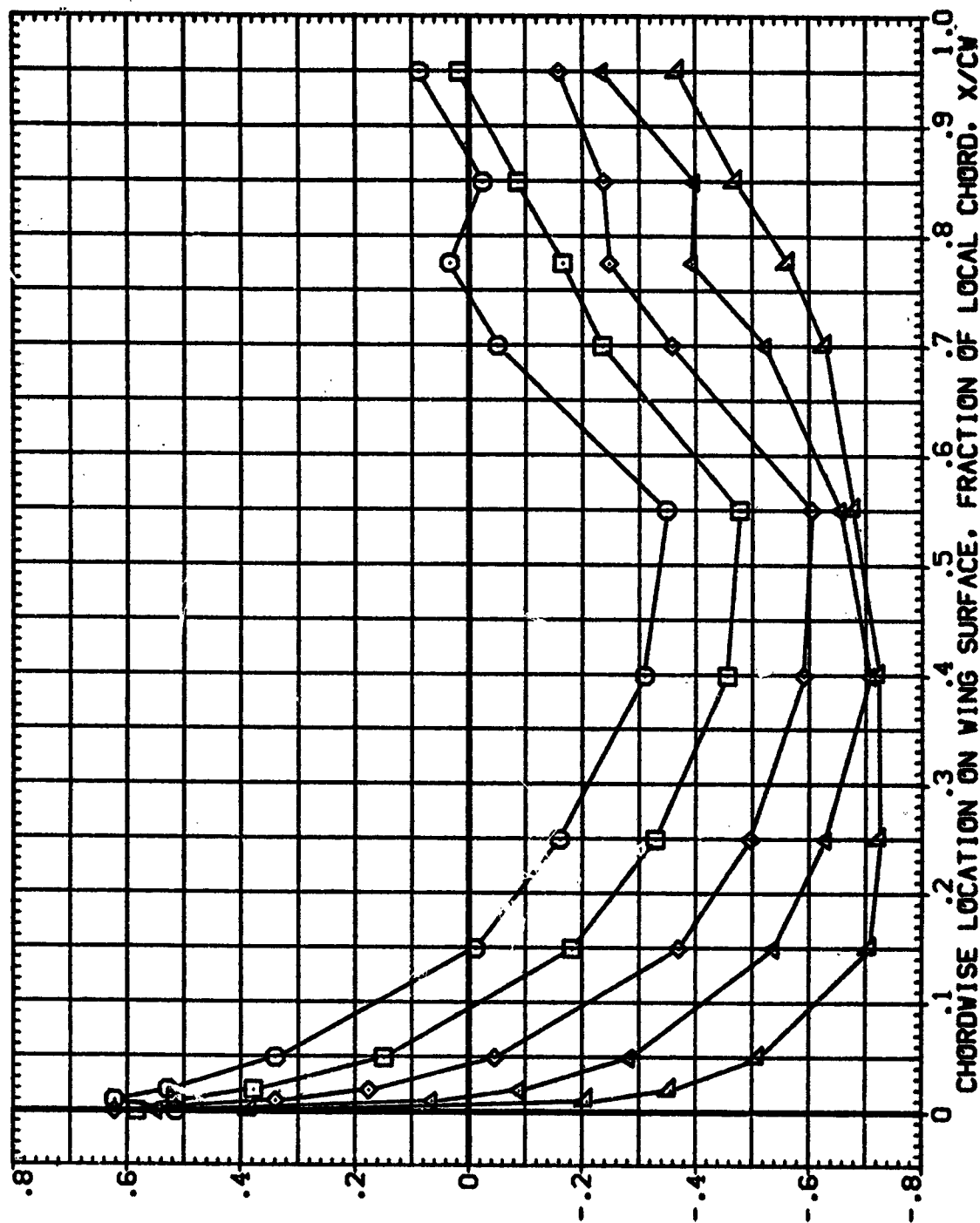


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-07386A1483 -140A/B/C/R AND LEFT WING 10P1128002J

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V .887
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPORRY 55.000
 SOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

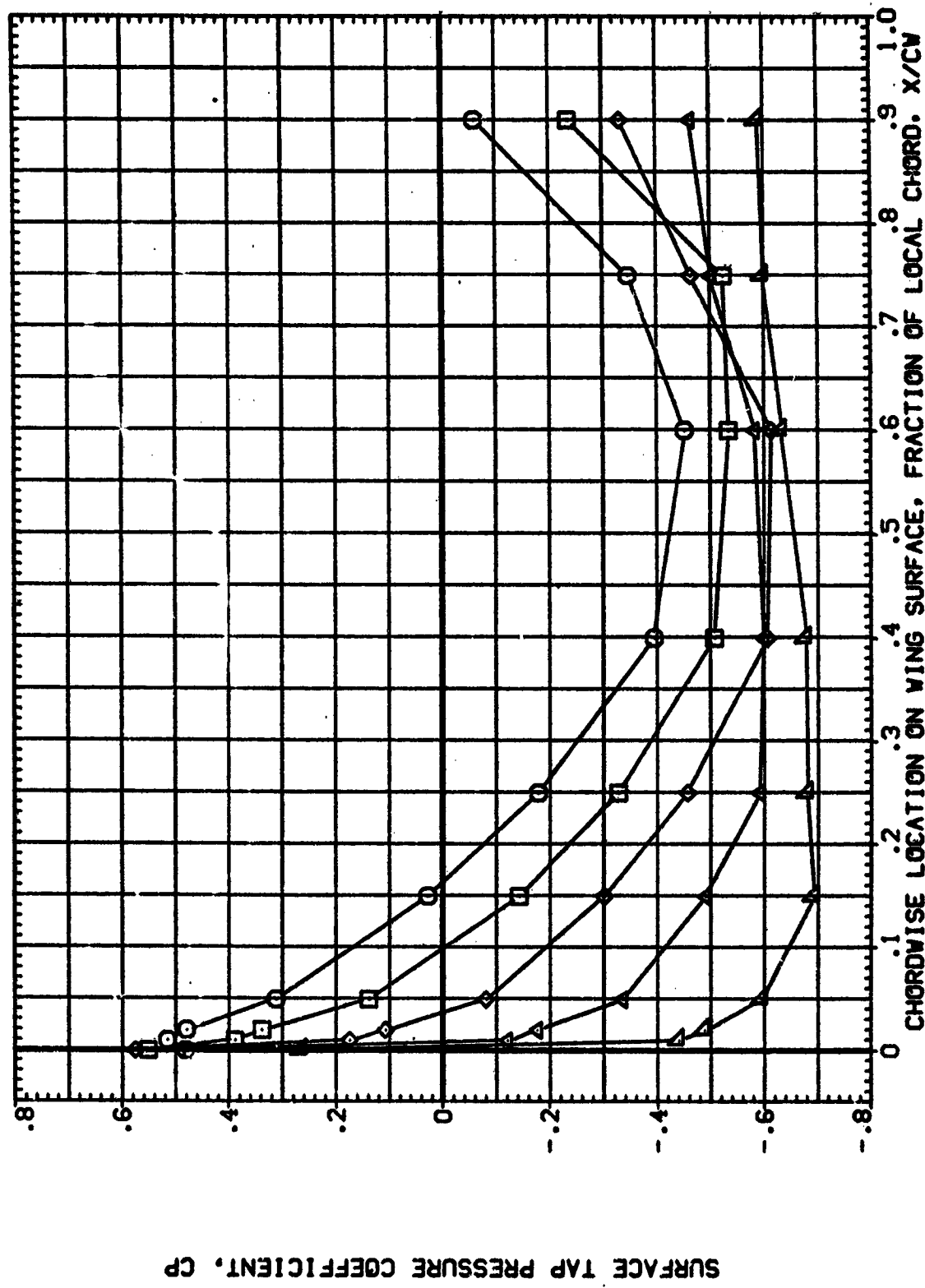


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U02)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .972
 BETA .000

RUDDER
 BOFLAP
 R-ELVN

PARAMETRIC VALUES

.000 SPDBRK
 16.300 L-ELVN
 .000 MACH
 55.000

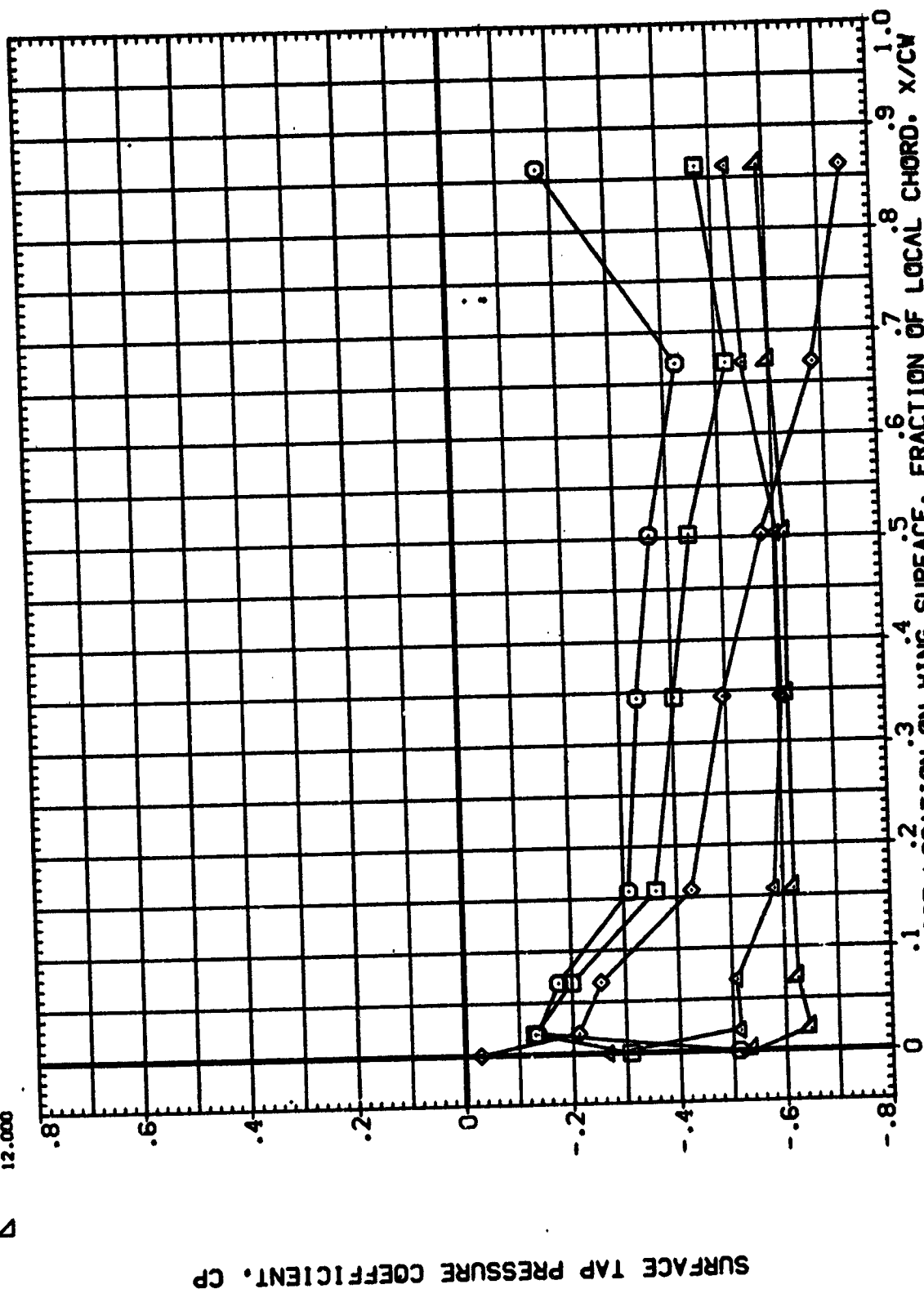


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U02)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
4.000
8.000
12.000

21/8V
.299

BETA
4.000

PARAMETRIC VALUES
RUDDER
80FLAP
R-ELVN
.000
16.300
.000

SPDRK
L-ELVN
MACH
55.000
.000
1.250

SURFACE TAP PRESSURE COEFFICIENT, CP

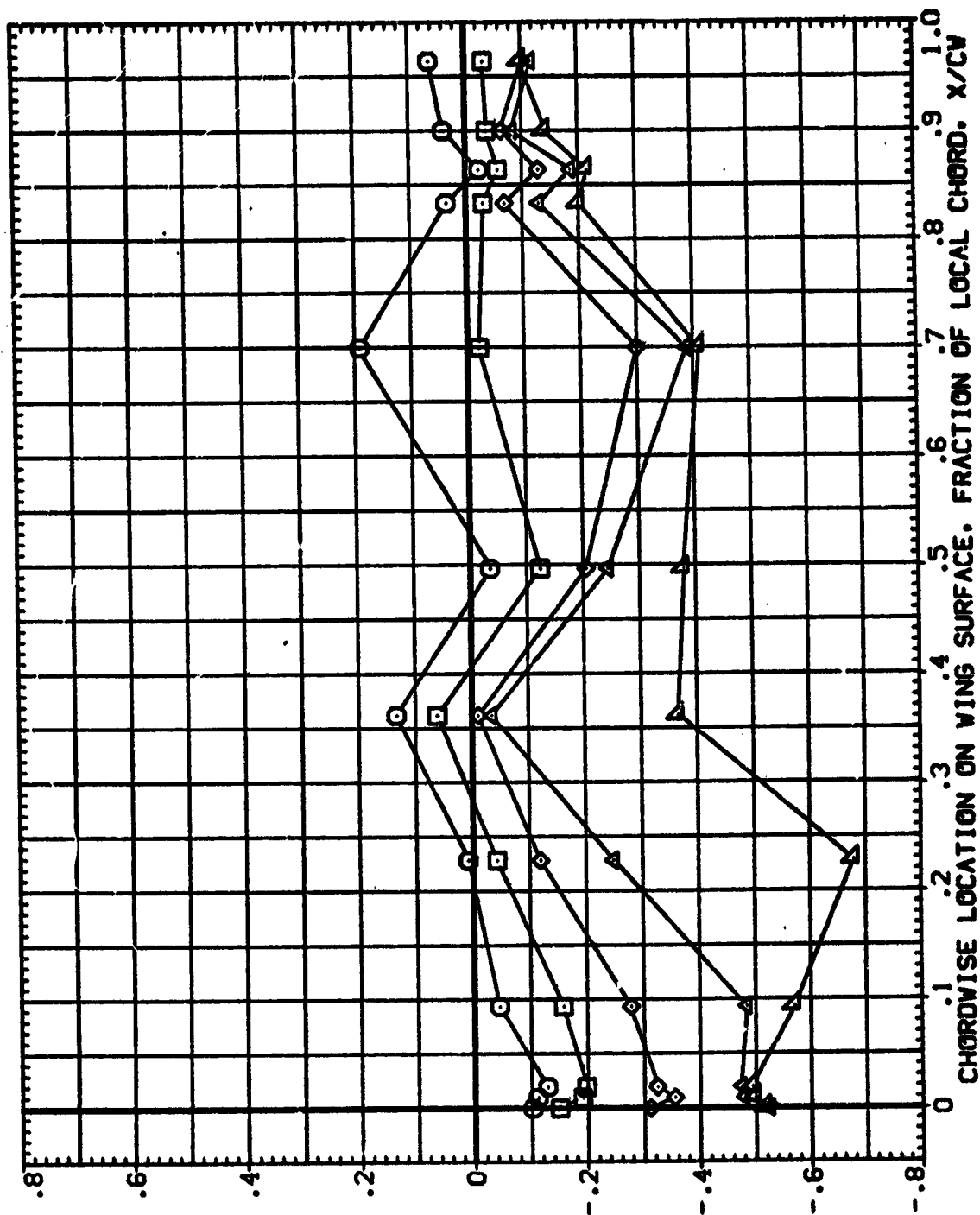


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

PARAMETRIC VALUES	
.000	SPOBRK
16.300	L-ELVN
.000	MACH
95.000	
.000	
1.250	

RUDDER
BOFLAP
R-ELVN

ALPHA	2Y/5Y	BETA
-4.000	.427	4.000

Symbl ○◊◄◄

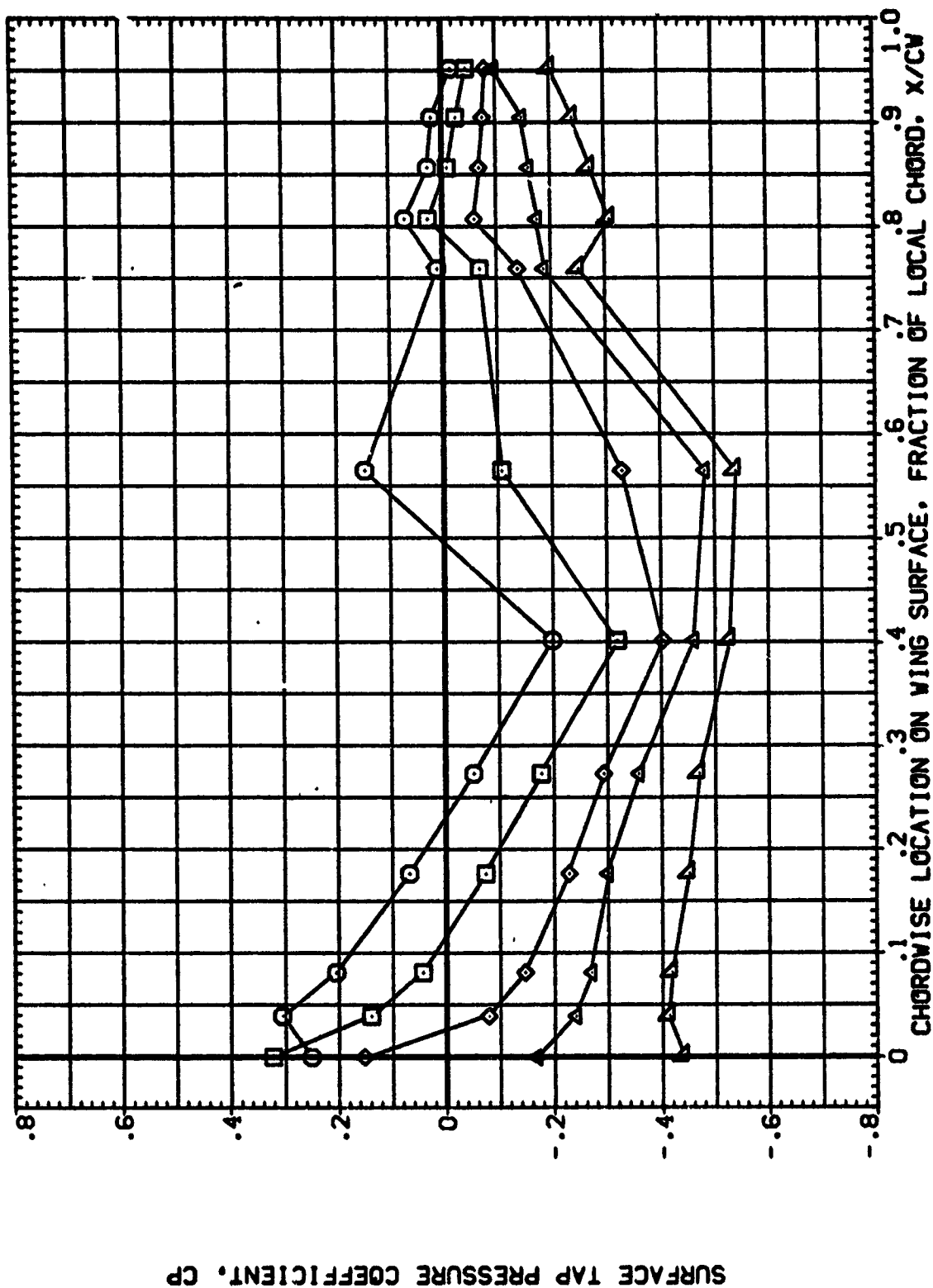


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U02)

PARAMETRIC VALUES
 RUDDER .000 SPORXK 55.000
 SOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.250

ALPHA 21/BN BETA
 -4.000 .573 4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ○

SURFACE TAP PRESSURE COEFFICIENT, CP

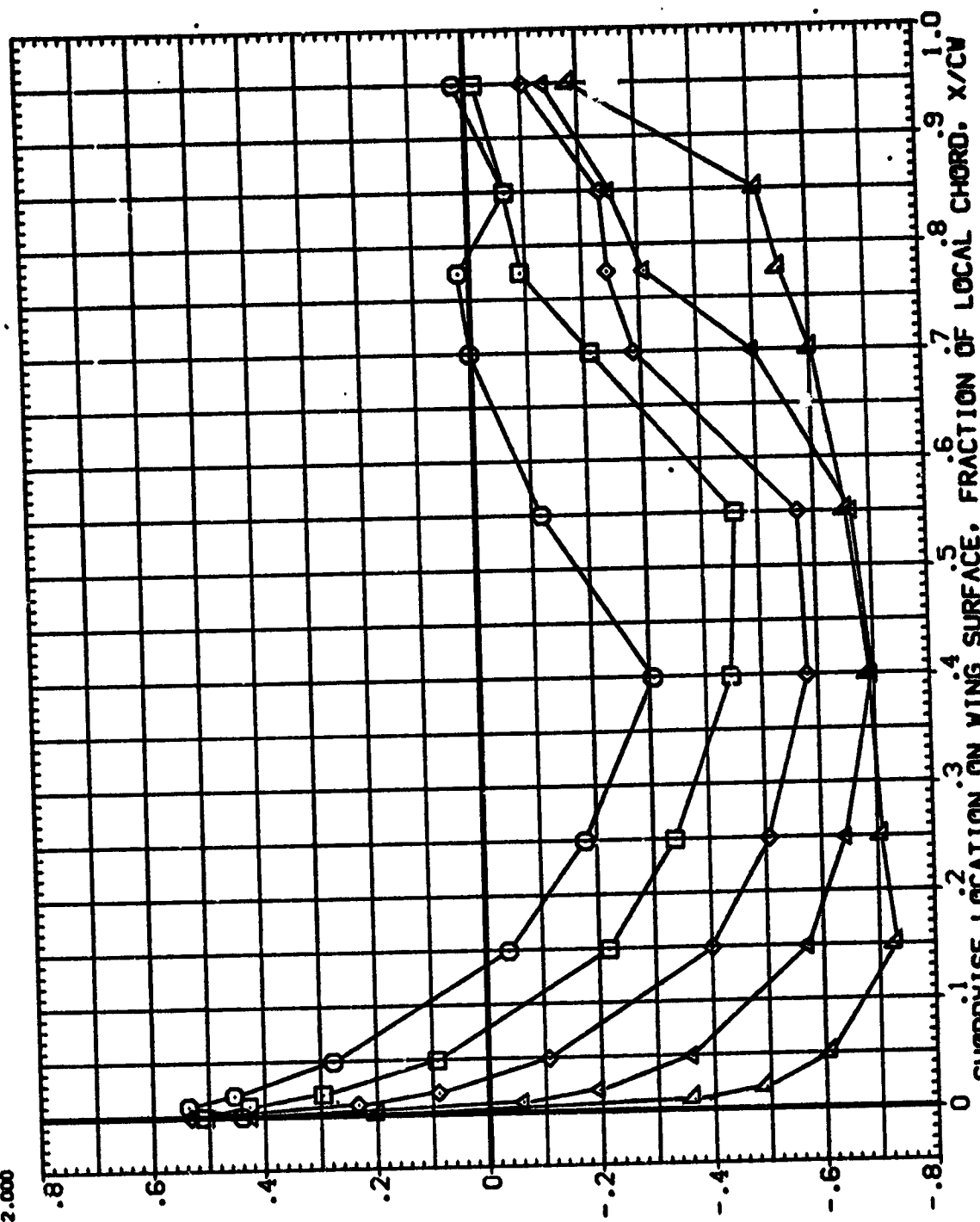


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U02)

SYMBOL	ALPHA	2Y/BV	BETA	PARAMETRIC VALUES			
				RUDDER	80FLAP	R-ELVN	55.000 .000 SPDRK 16.300 L-ELVN .000 MACH 1.250
▽	-4.000	.887	4.000				
◇	.000						
□	4.000						
△	8.000						
○	12.000						

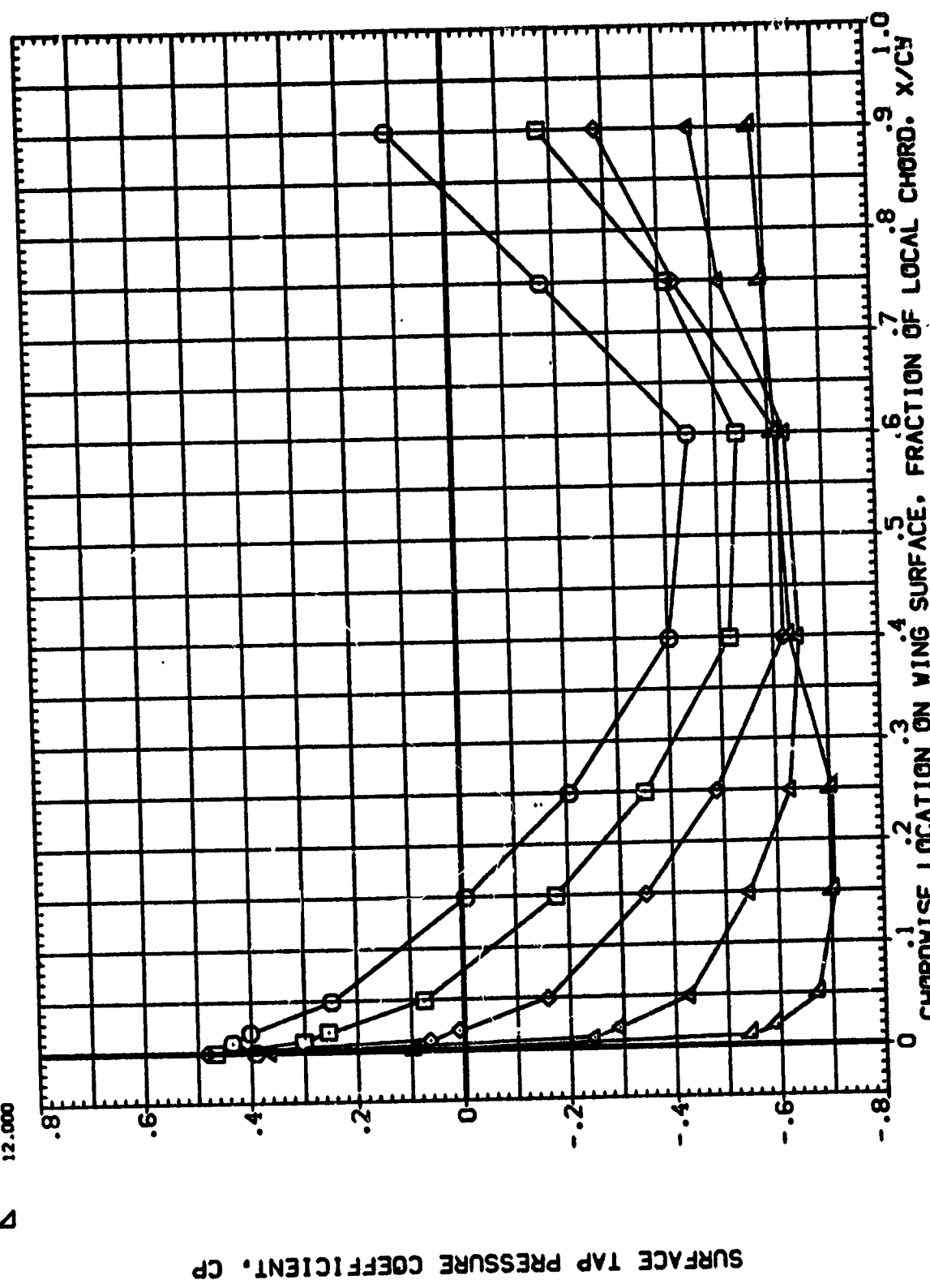


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL
▽
◇
□
△

ALPHA
-4.000
.000
4.000
8.000
12.000

2Y/BV
.972

BETA
4.000

PARAMETRIC VALUES
RUDDER
80FLAP
R-ELVN

.000
16.300
.000

SP080K
L-ELVN
NACH

55.000
.000
1.250

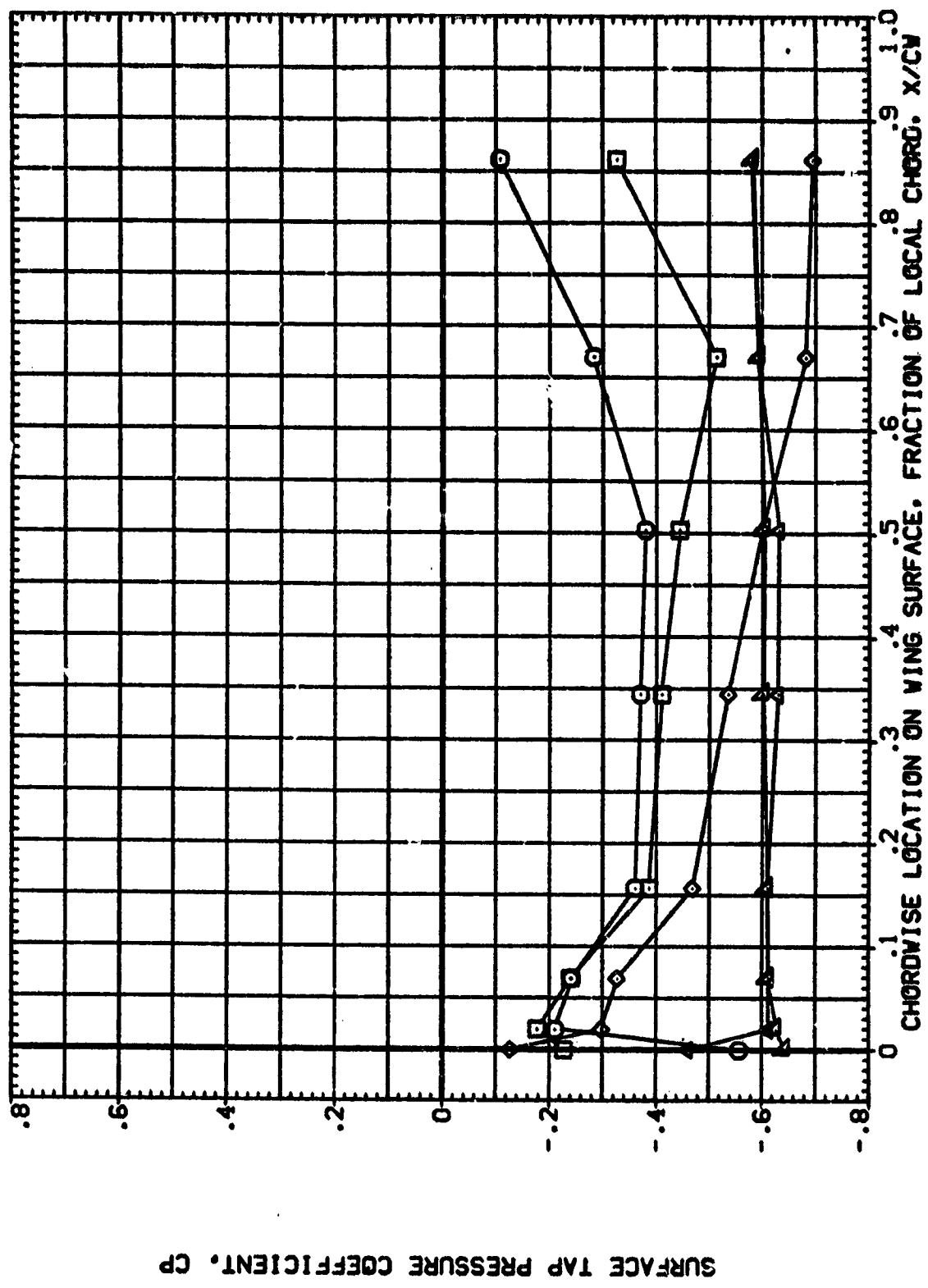


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

SYMBOL	ALPHA	21/8V	BETA	PARAMETRIC VALUES
○	-4.000	.299	-4.000	RUDDER
◇	.000			80FLAP
□	4.000			R-ELVN
△	8.000			
	12.000			
	16.000			
				55.000
				SPDRK
				.000
				L-ELVN
				.000
				MACH
				1.400

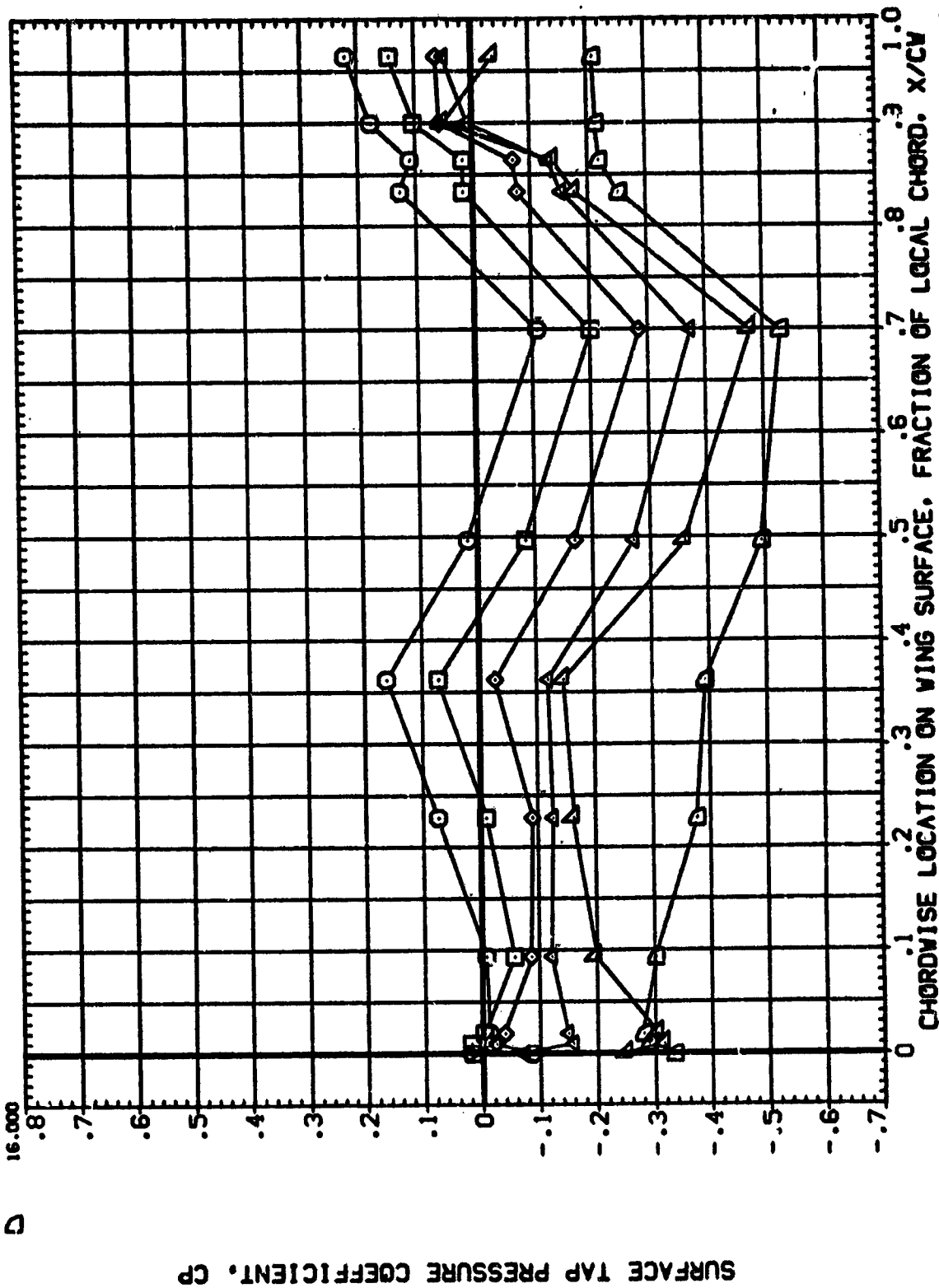


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

SYMBOL
 □ ◇ △ ▽ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

ZI/BI BETA
 .427 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRXK .000 55.000
 SOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

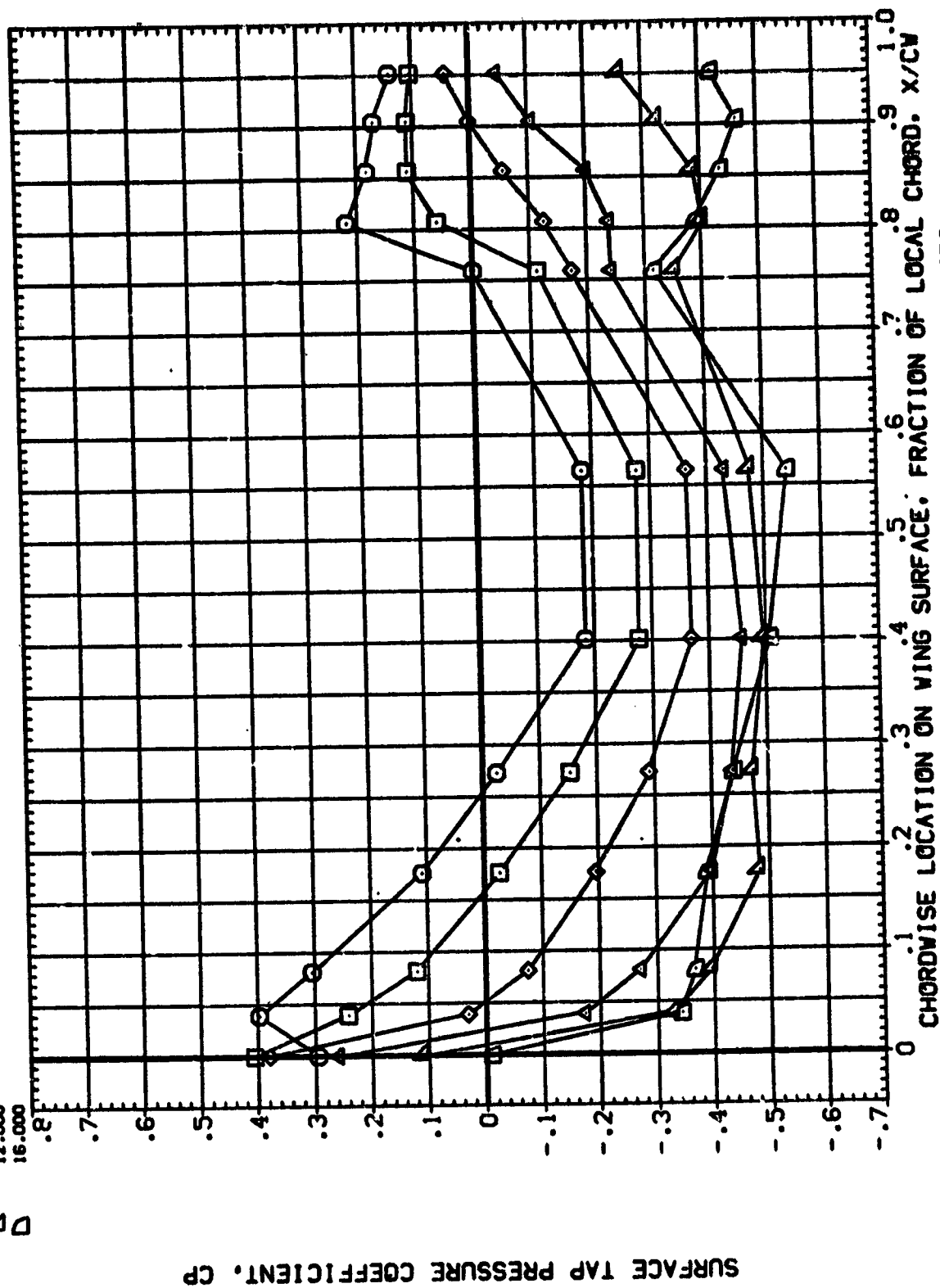


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E9U01)

PARAMETRIC VALUES
 RUDDER .000 SPOBRK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA 2Y/BV BETA
 -4.000 .673 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ○ □ △ ◇

SURFACE TAP PRESSURE COEFFICIENT, CP

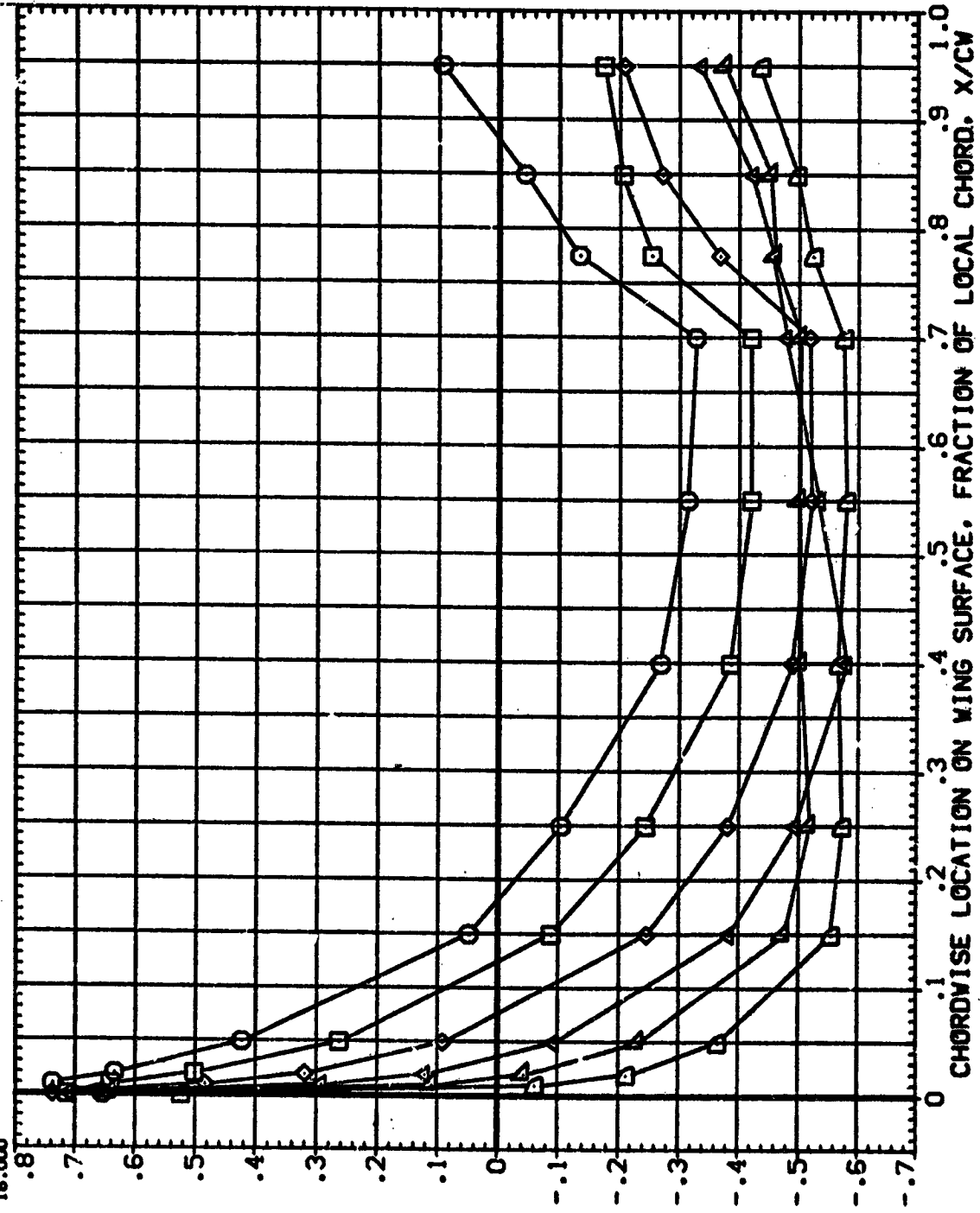


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-07 AUG 1981 140000Z 11 AUG 1981 181 180000Z

PARAMETRIC VALUES
RUDDER .000 55.000
BOFLAP 16.300 1.000
R-ELVN .000 1.400

SYMBOL
ALPHA 21/BV BETA
-4.000 .887 -4.000
4.000
8.000
12.000
16.000

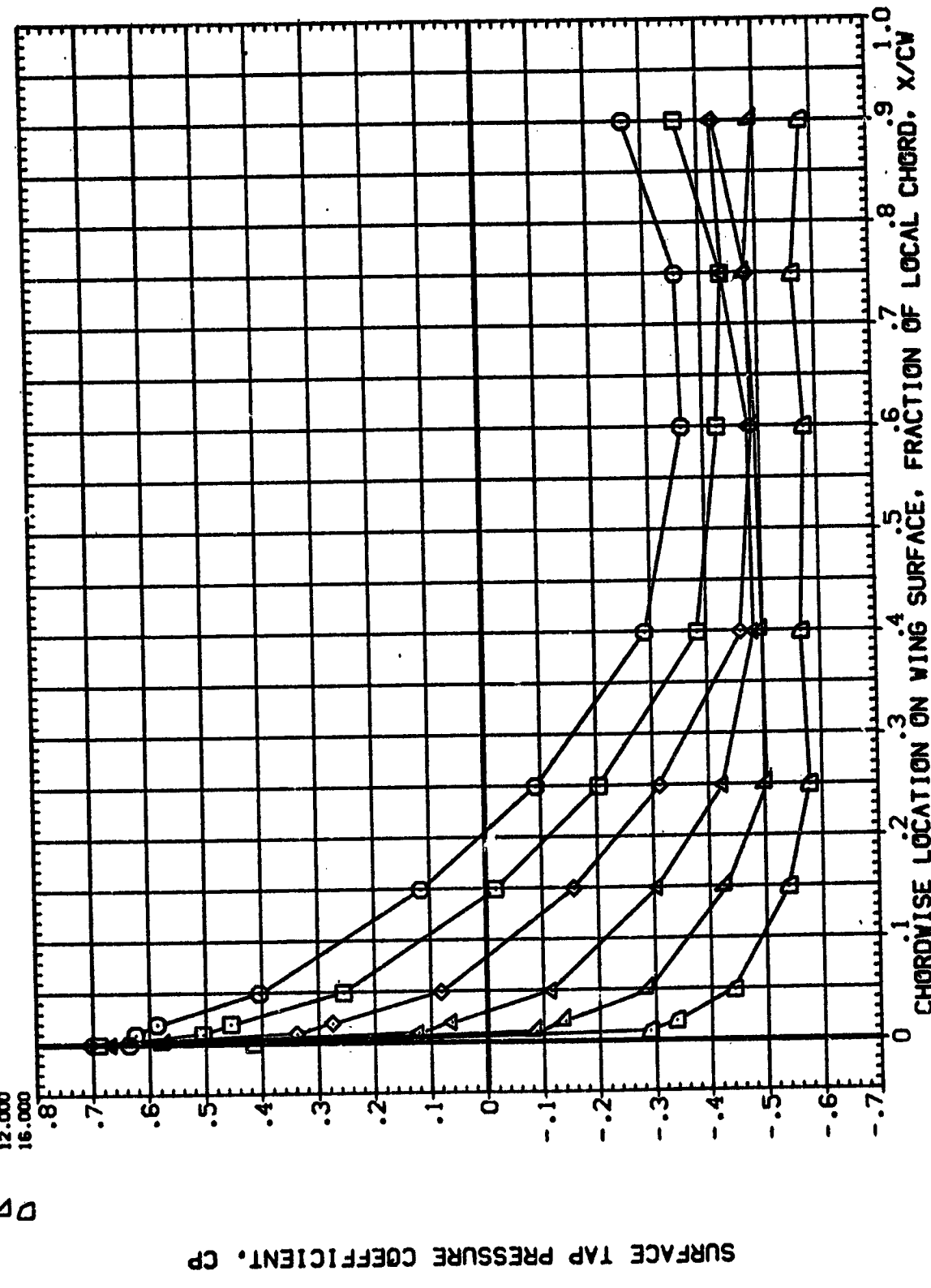


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

PARAMETRIC VALUES
 RUDDER .000 SPORRK 55.000
 80FLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA 21/8V BETA
 -4.000 .972 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ▽ ▴ ◊ □

SURFACE TAP PRESSURE COEFFICIENT, CP

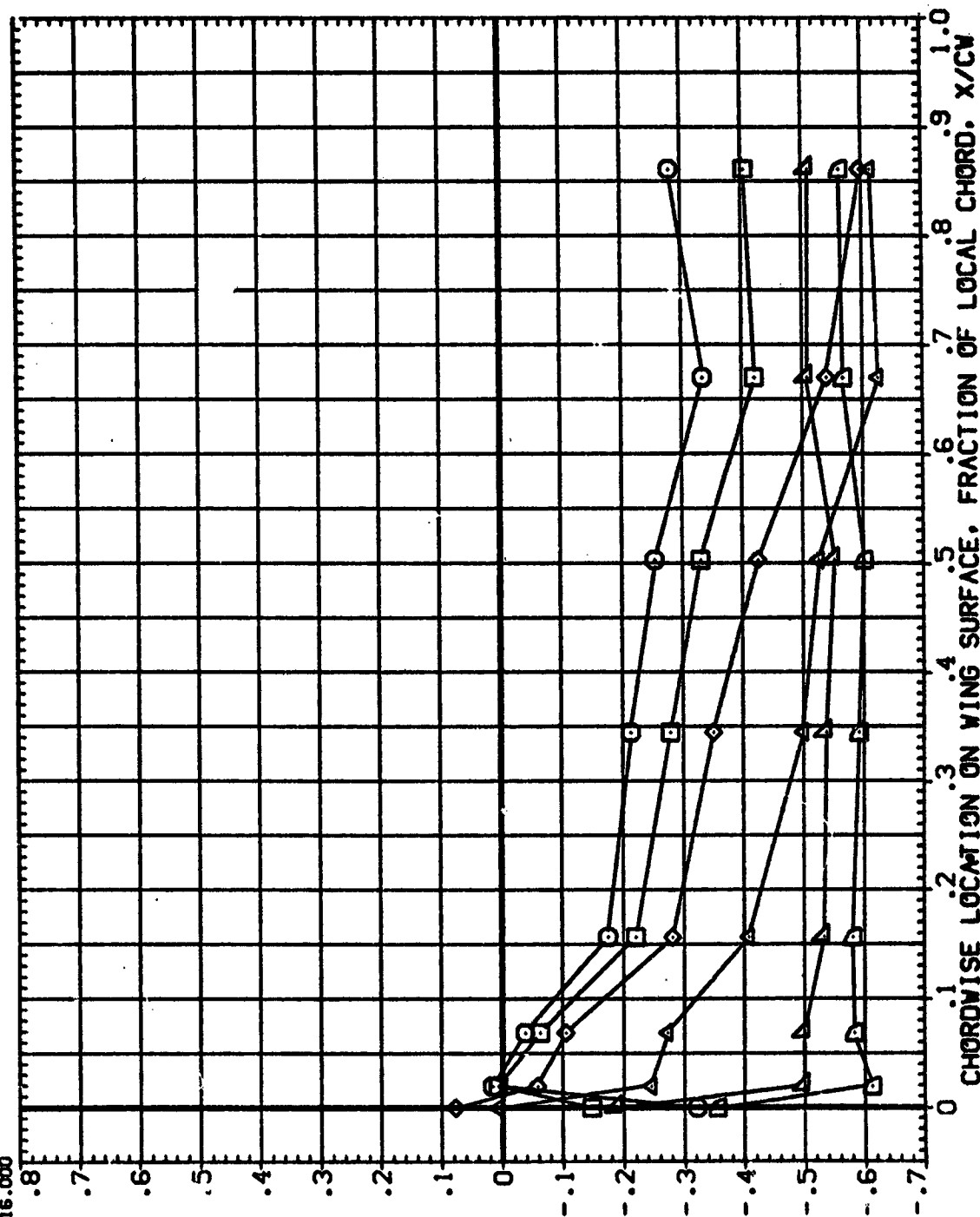


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRK .000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

SYMBOL ALPHA 2Y/3V BETA
 -4.000 .299 .000
 .000 .000
 4.000
 8.000
 12.000
 16.000

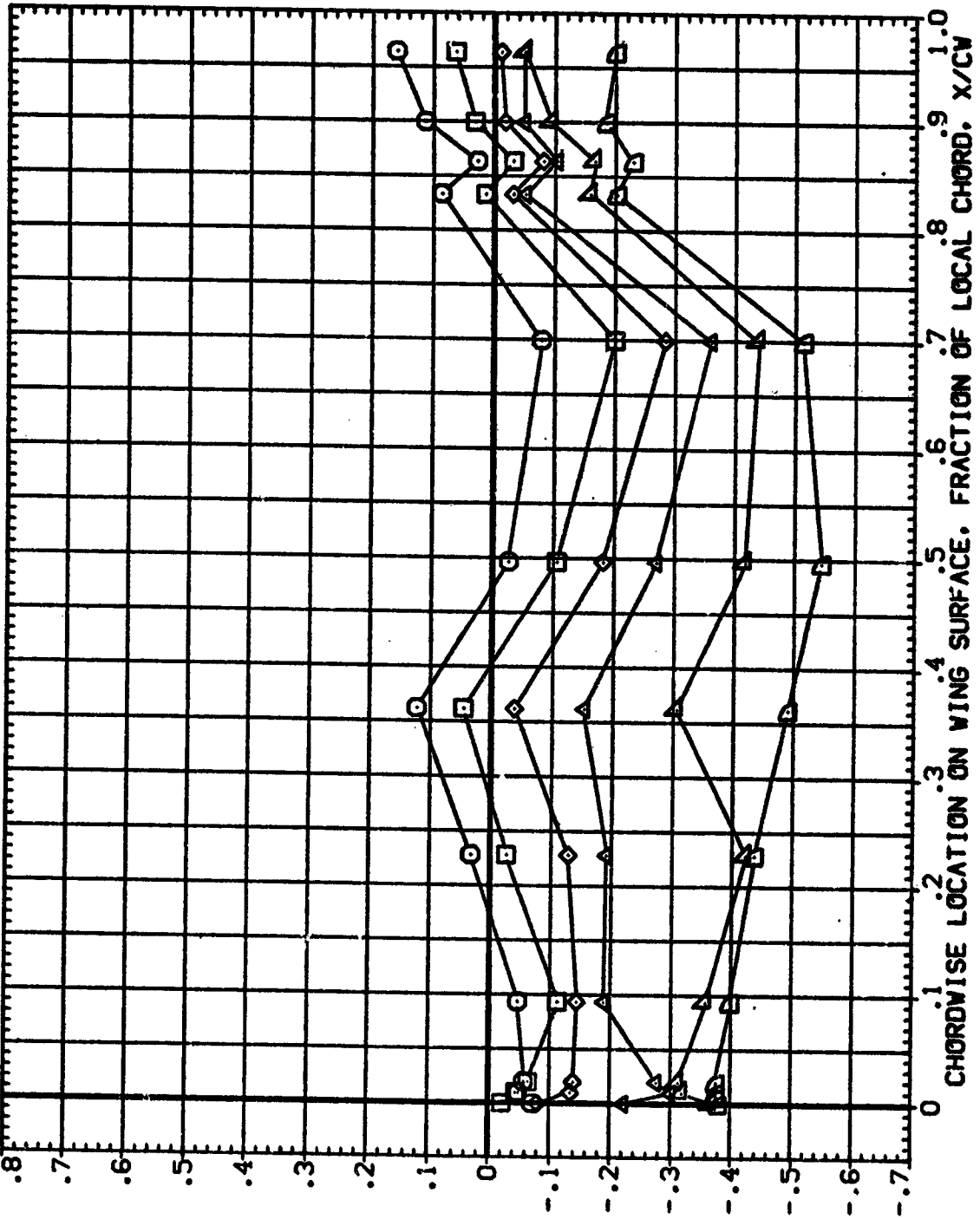


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

RUDDER	.000	SPDRBK	55.000
BDFLAP	16.300	L-ELVN	.000
R-ELVN	.000	MACH	1.400

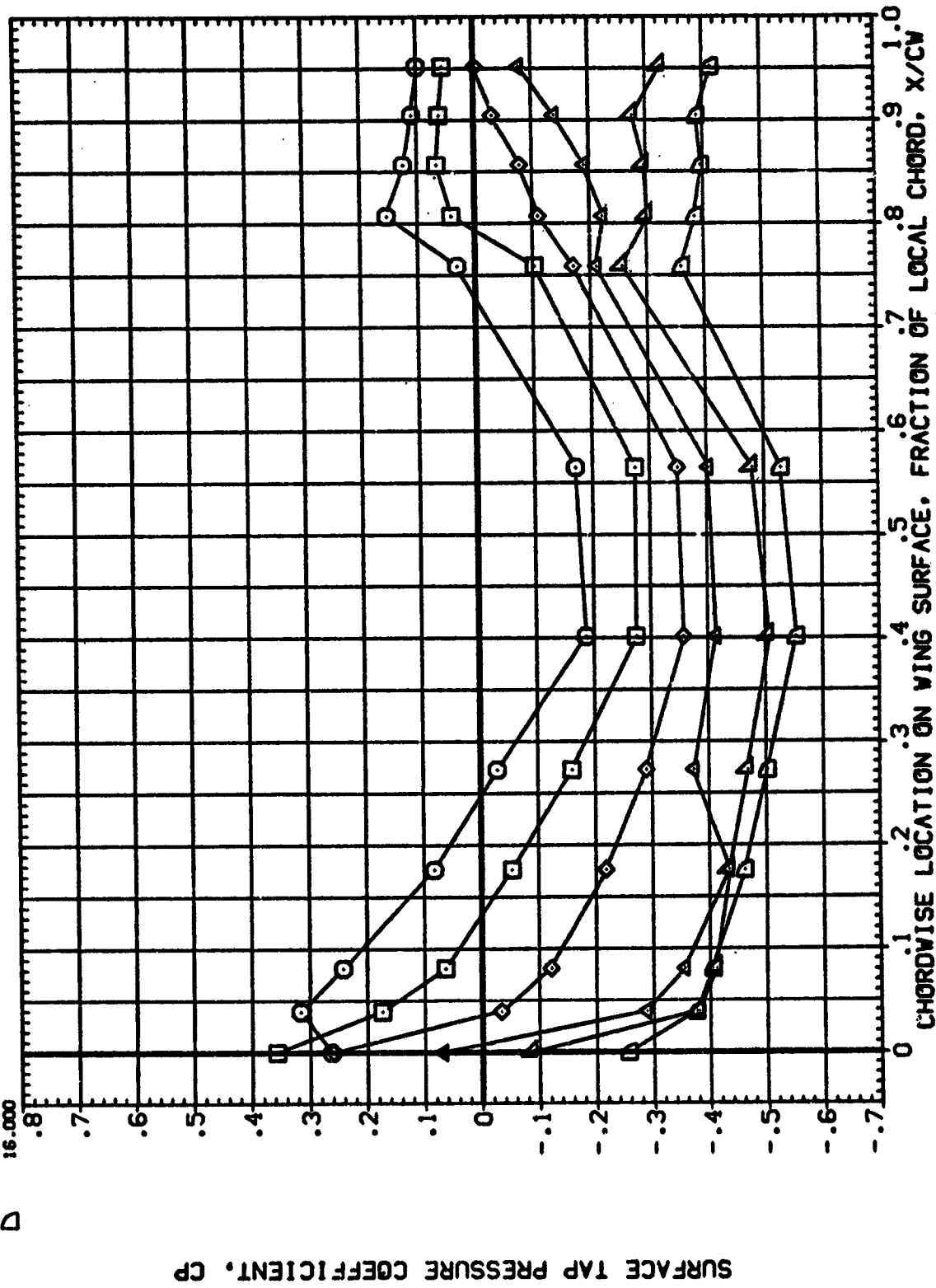


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

SYMBOL
 ○ ◇ □ □ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

21/BN
 .673

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

55.000
 .000
 16.300
 .000
 1.400

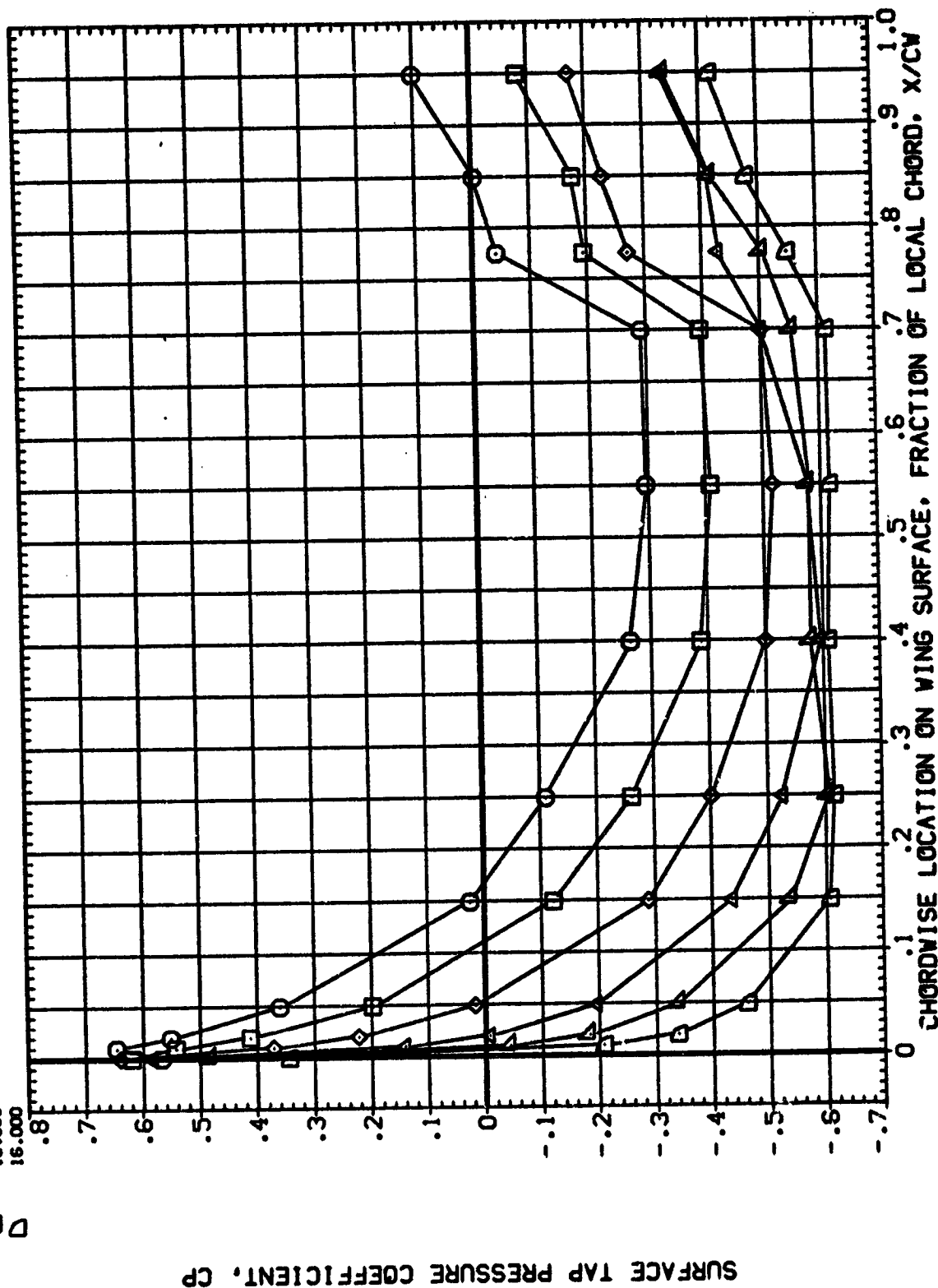


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

SYMBOL	ALPHA	ZI/BV	BETA	RUDDER	PARAMETRIC VALUES		
□	-4.000	.987	.000	BOFLAP	.000	SPDRK	.000
◇	4.000			R-ELVN	.000	L-ELVN	.000
△	8.000				.000	MACH	1.400
▽	12.000						
○	16.000						

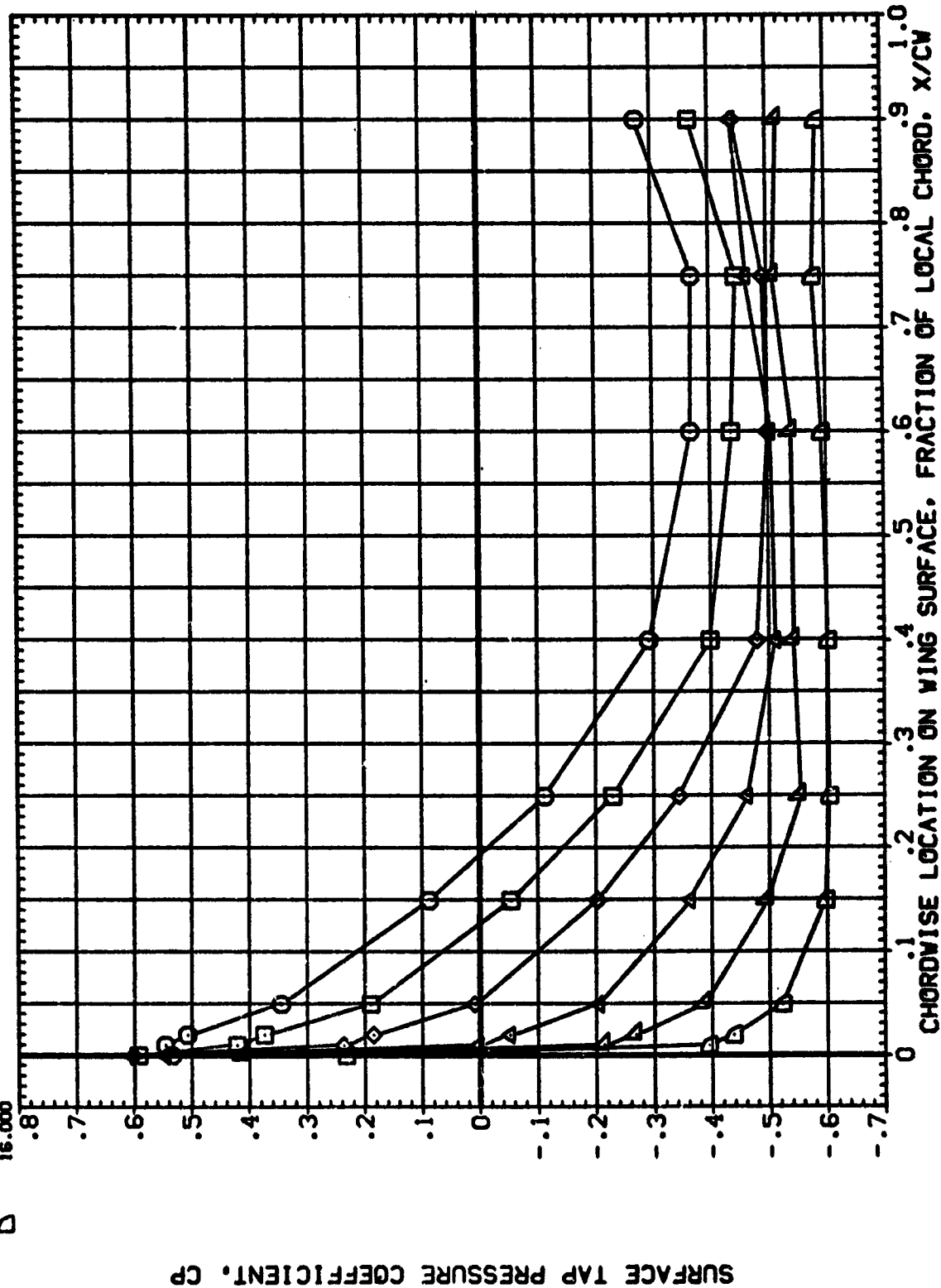


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

PARAMETRIC VALUES
 .000 SPDRK 55.000
 16.300 L-ELVN .000
 .000 MACH 1.400

RUDDER
 BDFLAP
 R-ELVN

ALPHA 21/BV BETA
 -4.000 .972 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ ◆ ▲ ▼ ▽

SURFACE TAP PRESSURE COEFFICIENT, CP

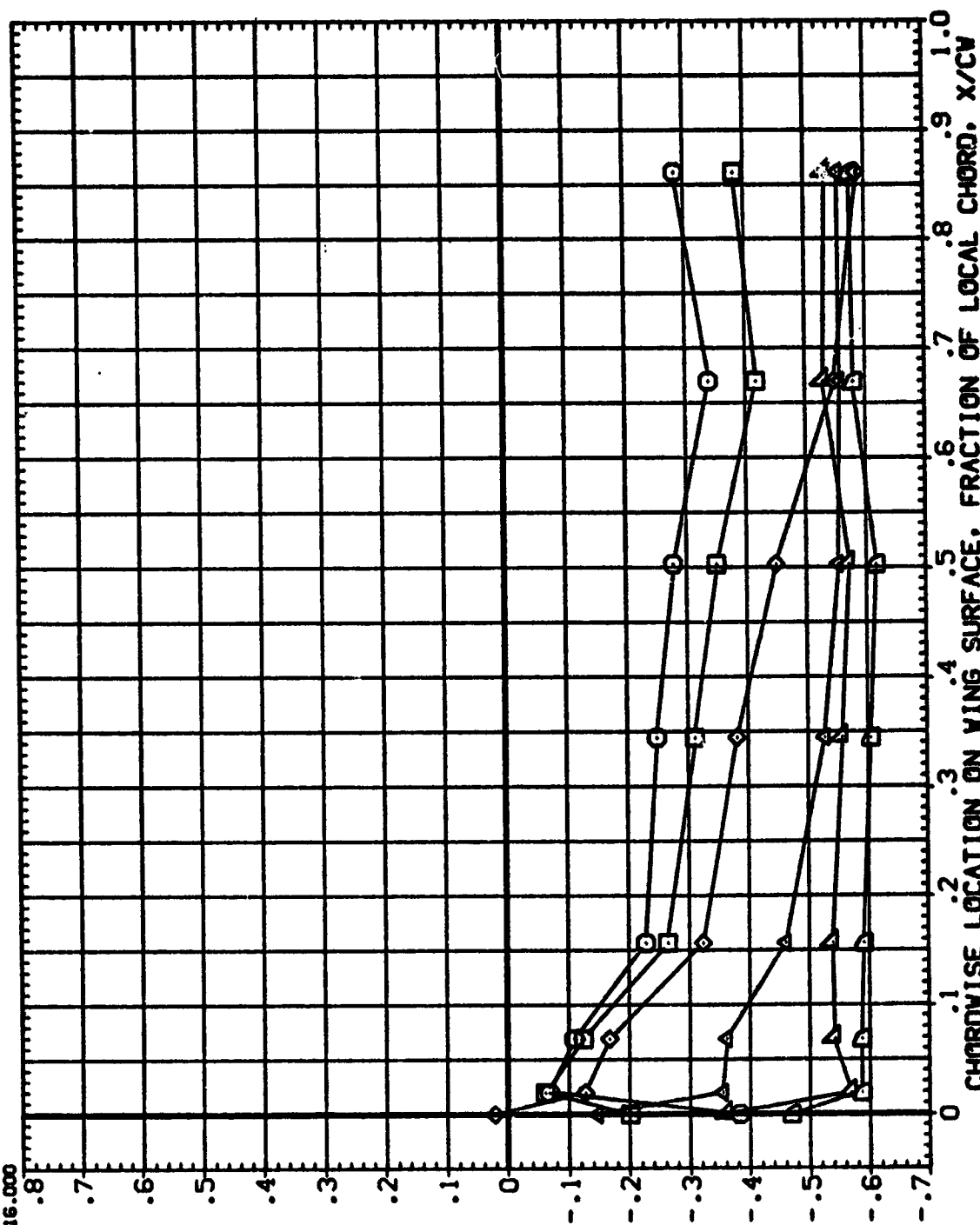


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.259	4.000	BOFLAP	.000 SPDBRK
◇	.000			R-ELVN	16.300 L-ELVN
△	4.000				.000 MACH
▽	8.000				
▽	12.000				
▽	16.000				

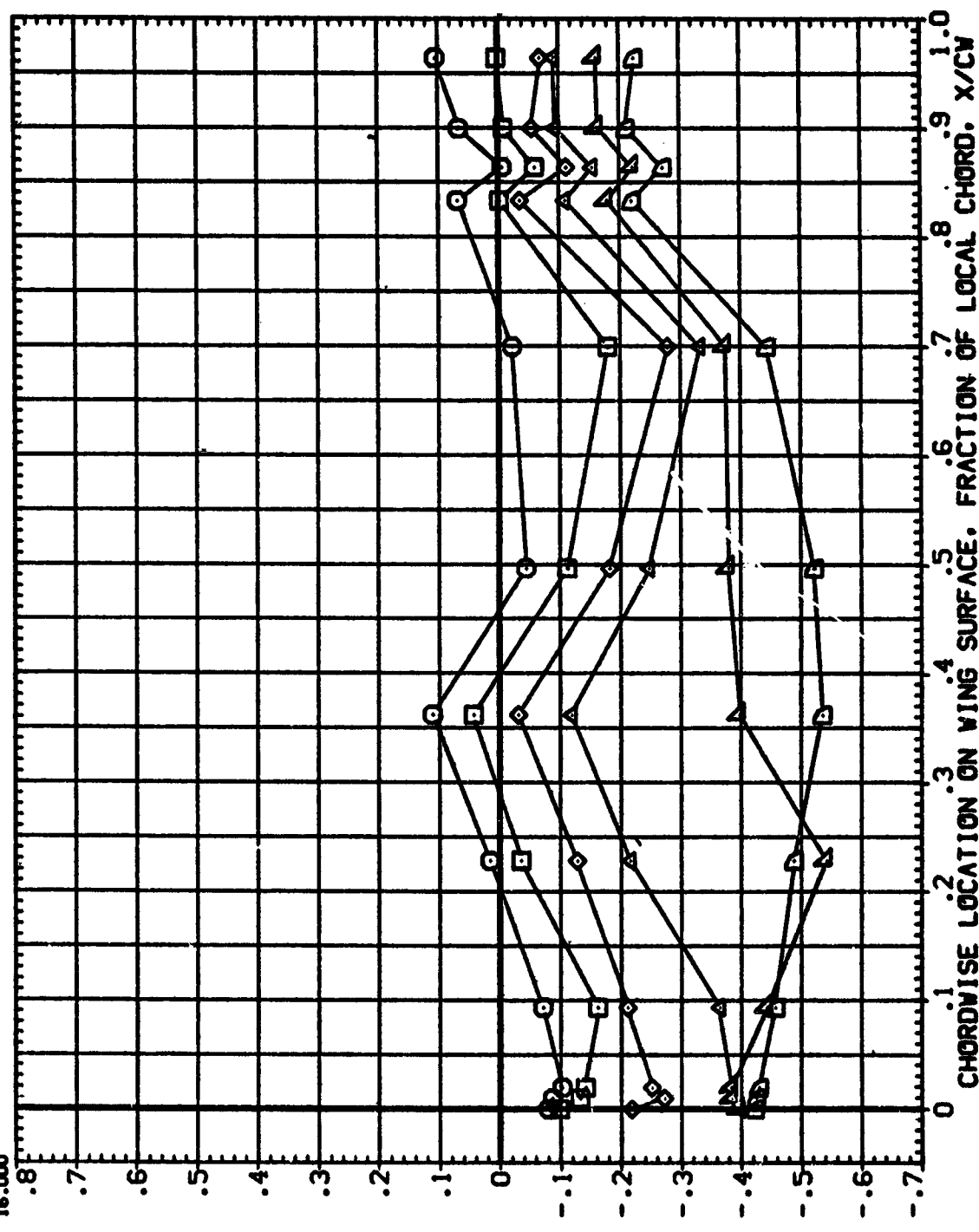


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-07360A148 -148A/B/C/R AND LEFT WING (UPPER)

PARAMETRIC VALUES
 RUDDER .000 SPDRK 55.000
 BOFLAP 16.300 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA 27/BN BETA 4.000
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ ○ □ ◇ ○ □ ◇ ○

SURFACE TAP PRESSURE COEFFICIENT, CP

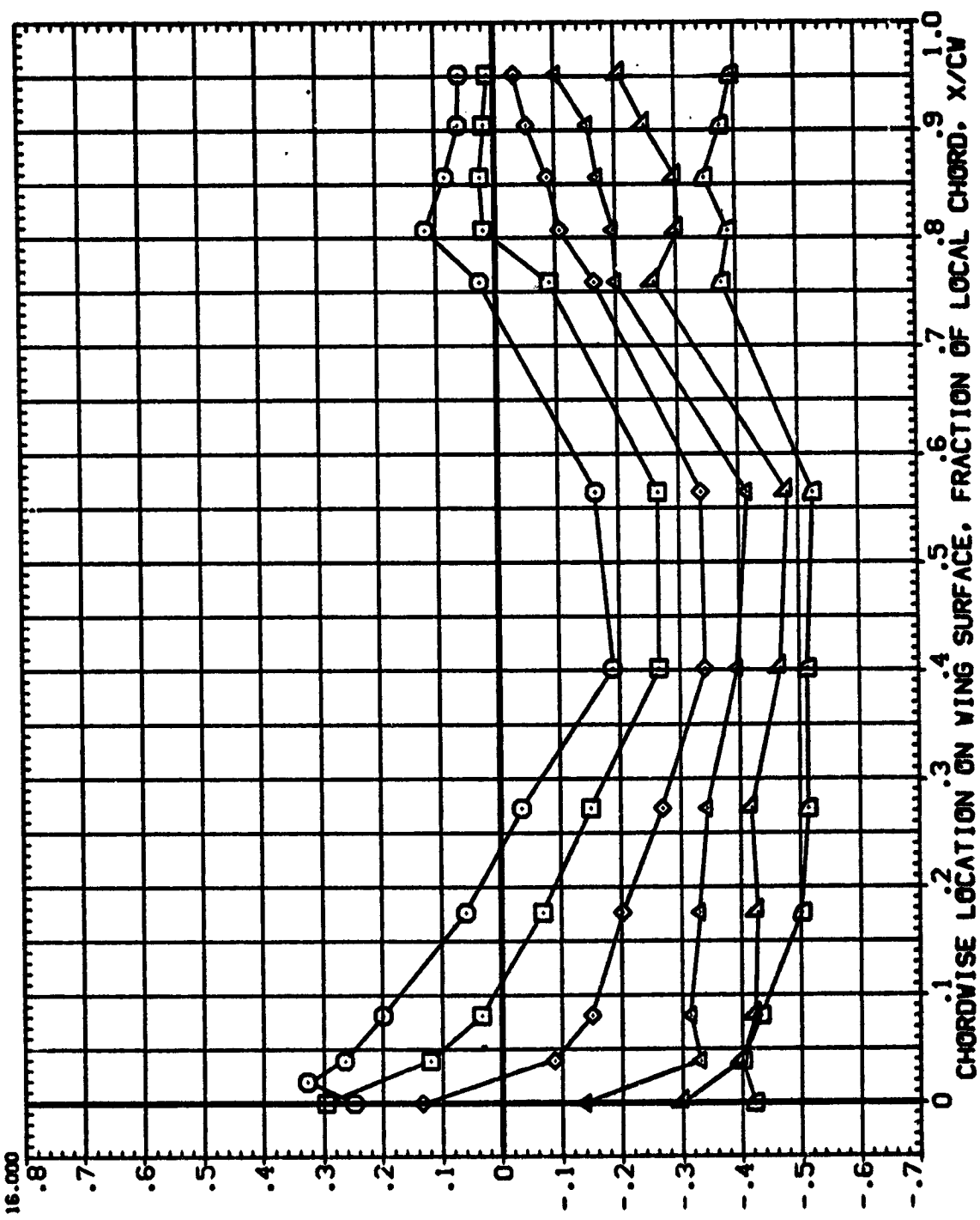


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(1E8U01)

PARAMETRIC VALUES
 SPORBK .000
 L-ELVN .000
 MACH 1.400

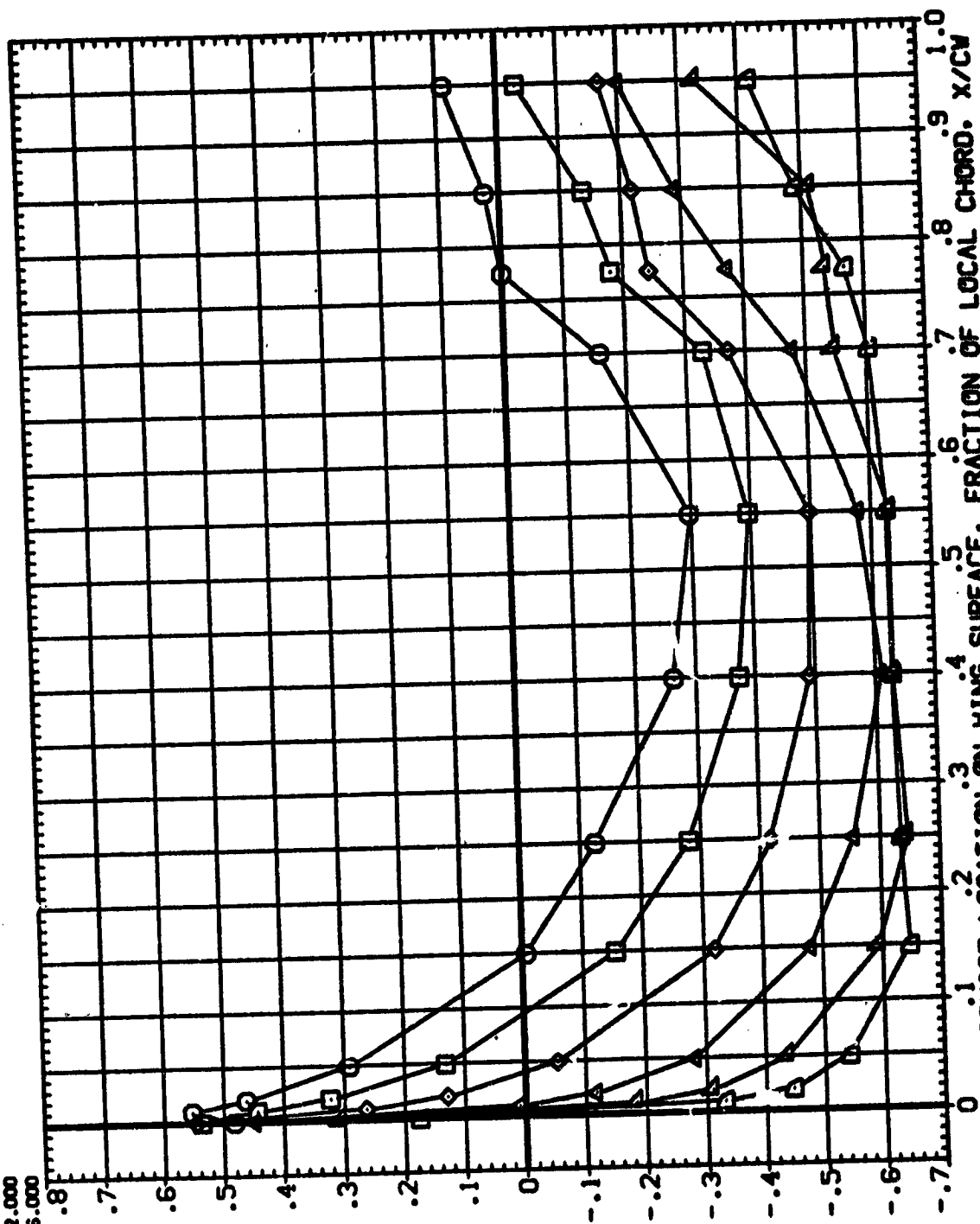
RUDER
 BOFLAP
 R-ELVN

2Y/8V BETA
 .673 4.000

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 ○ □ ◇ △

SURFACE TAP PRESSURE COEFFICIENT, CP



CHORDWISE LOCATION ON WING SURFACE. FRACTION OF LOCAL CHORD. X/CV

FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
□	-4.000	.087	.000	RUDDER
◇	.000		.000	BOFLAP
△	4.000		.000	R-ELVN
▽	8.000		.000	MACH
○	12.000		.000	
◻	16.000		.000	

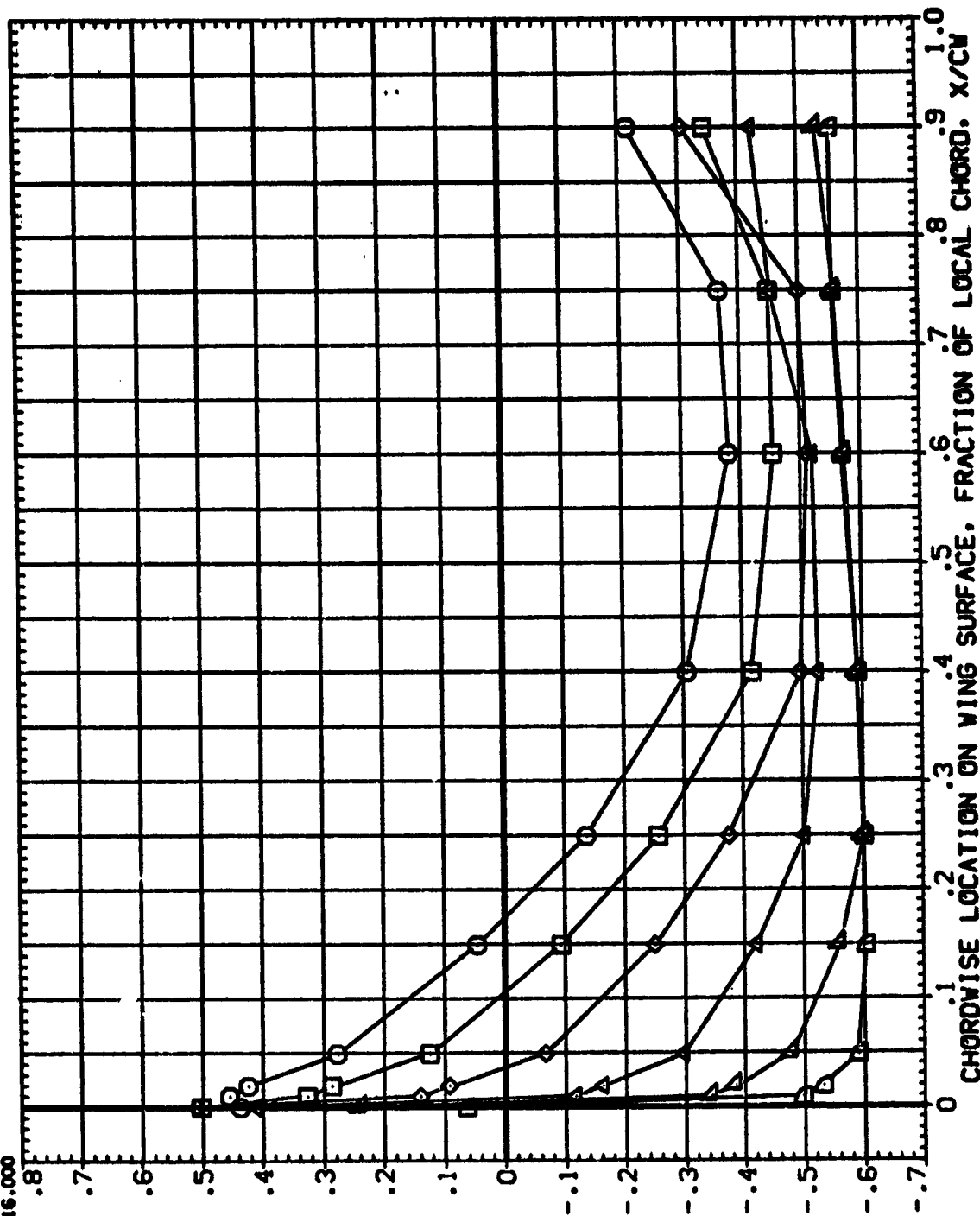


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB LEFT WING TOP(IE8U01)

PARAMETRIC VALUES
 .000 SPOBRK 55.000
 16.300 L-ELVN .000
 .000 RAJH 1.400

RUDDER
 80FLAP
 R-ELVN

2Y/BN .972 BETA 4.000

SYMBOL
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SURFACE TAP PRESSURE COEFFICIENT, CP

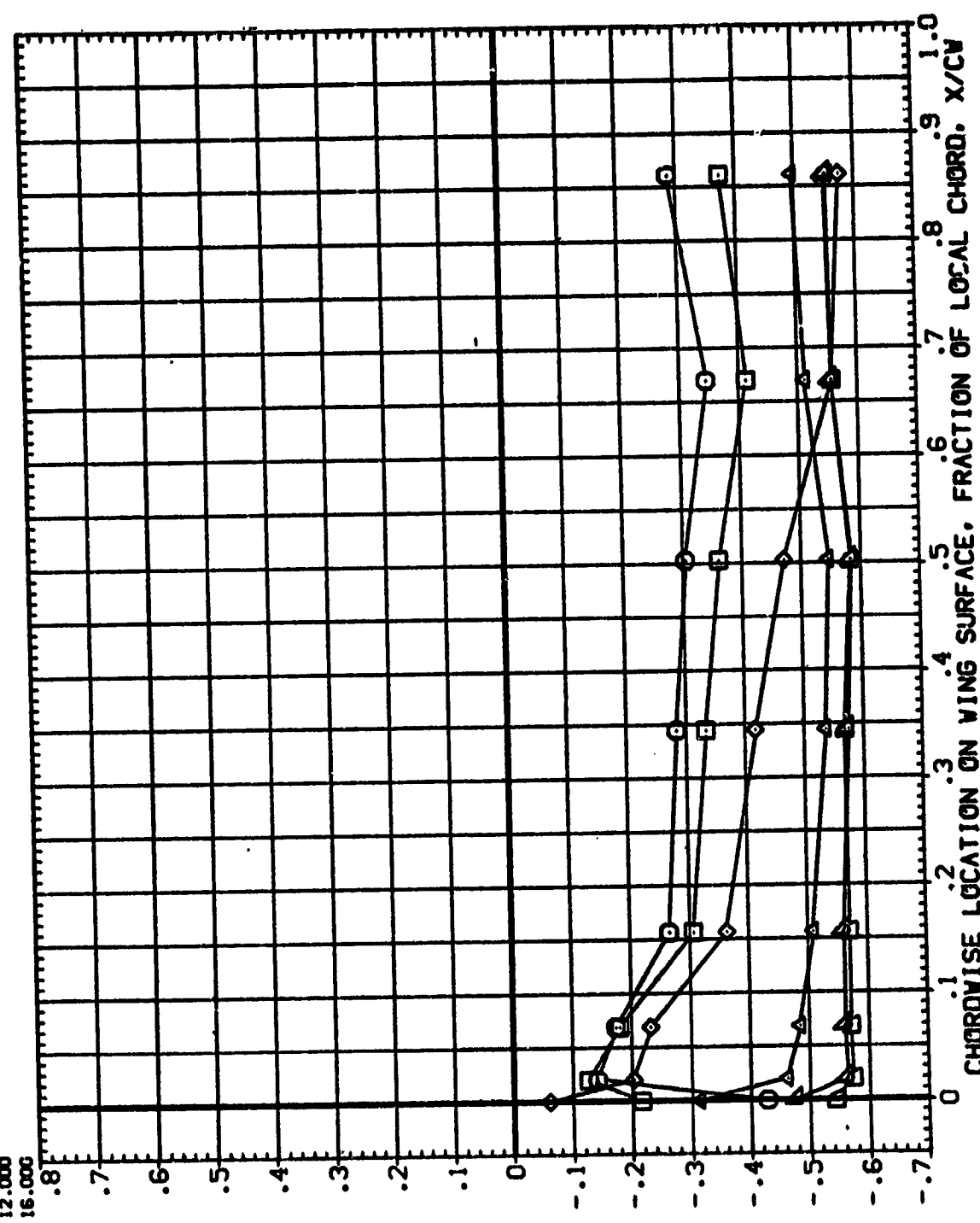


FIG. 11 LEFT WING TOP SURFACE ELEVON DEFLECTION 0 DEGREES

SYMBOL	ALPHA		2Y/3H		BETA		PARAMETRIC VALUES			
	-4.000	.000	.299	-8.000			RUDDER	-5.000	SP08RM	55.000
□	4.000						BOFLAP	16.300	L-ELVN	-10.000
◇	8.000						R-ELVN	-10.000	MACH	.600
△	12.000									

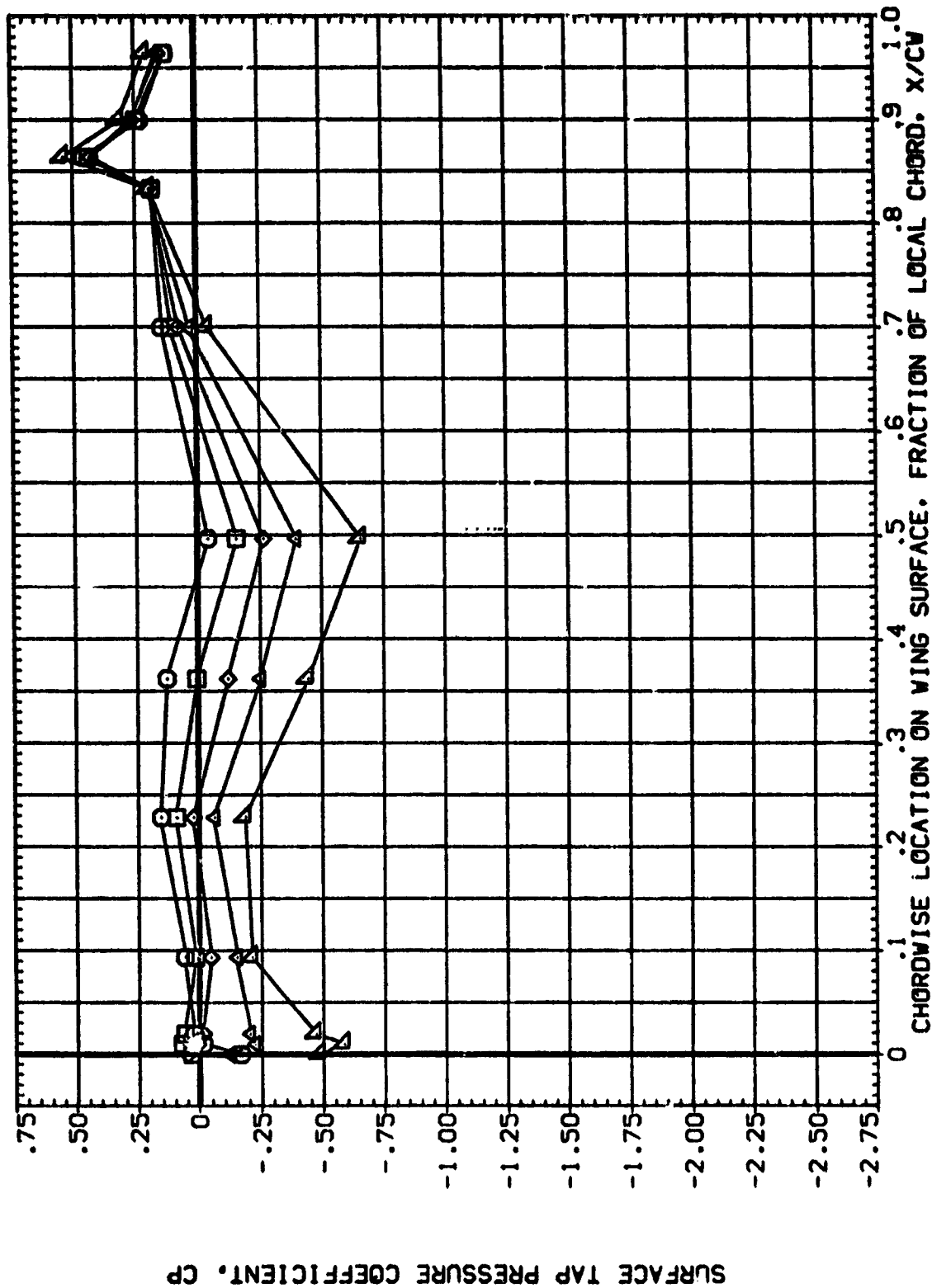


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U75)

SYMBOL
 ▽
 ◇
 ◻
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2 π /BV
 .427

BETA
 -6.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRBK
 L-ELVN
 MACH

55.000
 -10.000
 .600

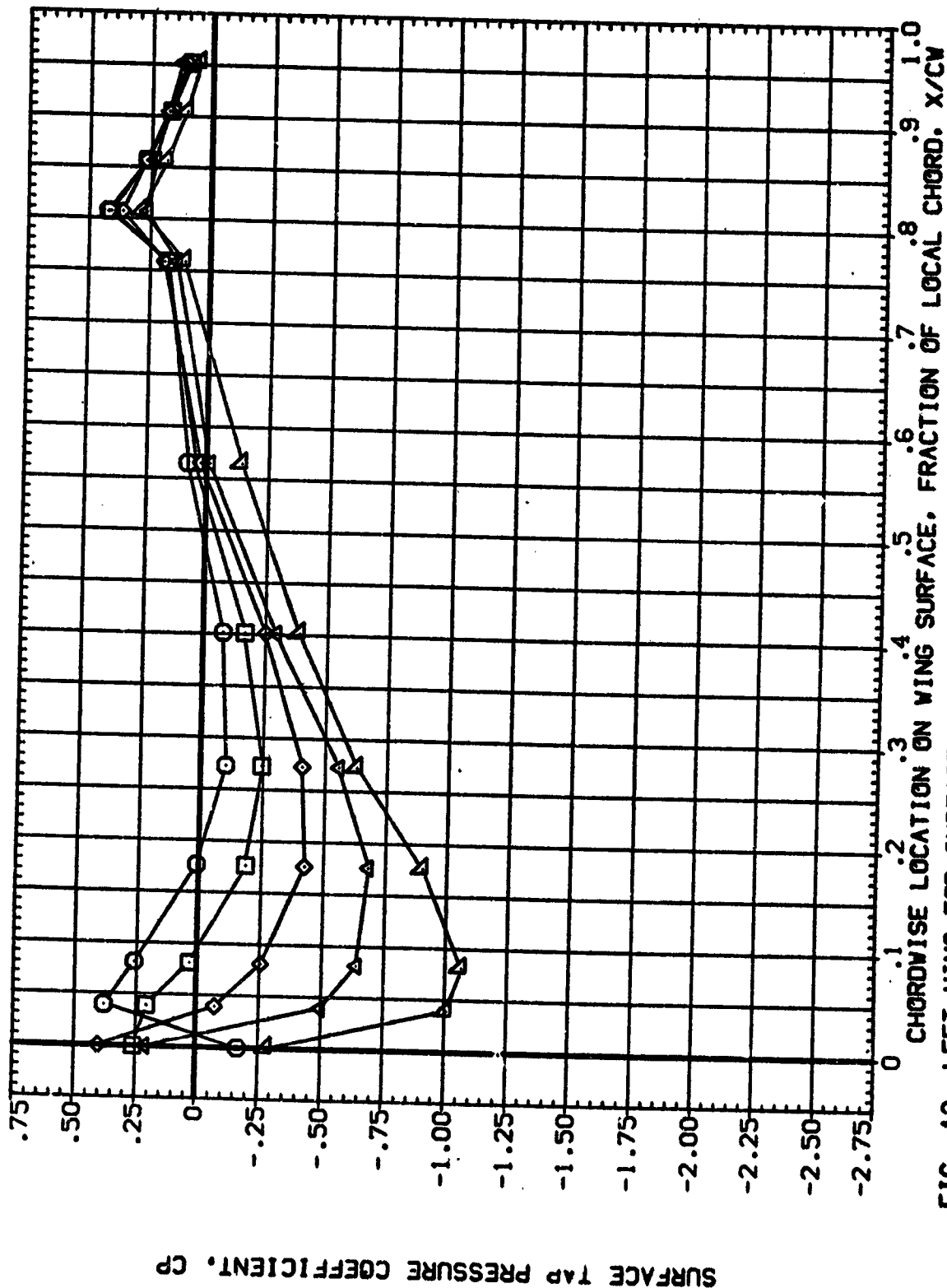


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	PARAMETRIC VALUES	
	RUDDER	SPDBRK
□	BOFLAP	16.300
◇	R-ELVN	-10.000
△		MACH
		.600

PARAMETRIC VALUES	
ALPHA	27/BV
-4.000	.673
.000	-8.000
4.000	
8.000	
12.000	

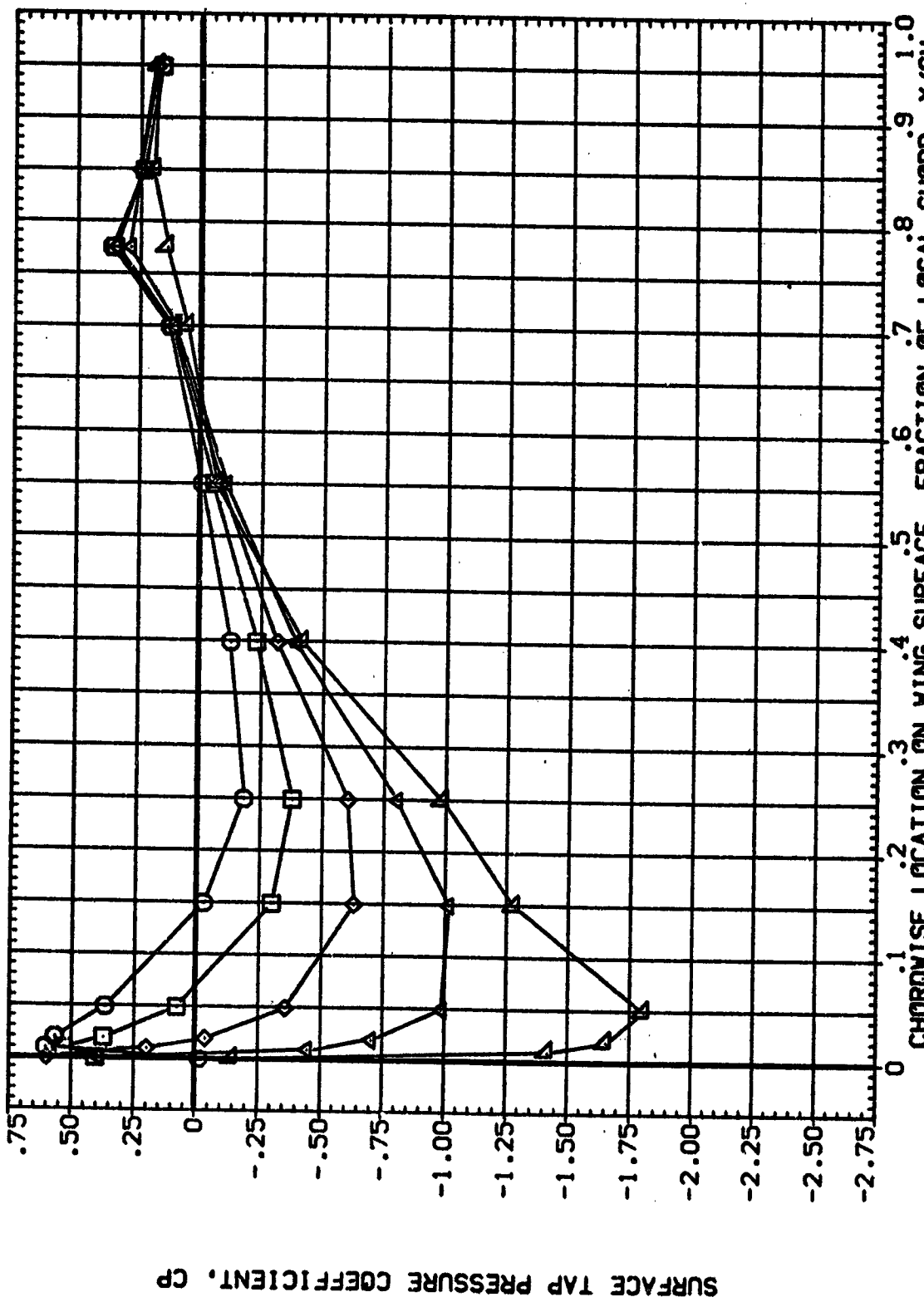


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U75)

PARAMETRIC VALUES
 -5.000 SPDRK 55.000
 16.300 L-ELVN -10.000
 -10.000 R-ELVN .600

RUDDER
 80FLAP
 R-ELVN

ALPHA 2Y/8V BETA
 -4.000 .887 -8.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ○ □ ◇ △ ▽

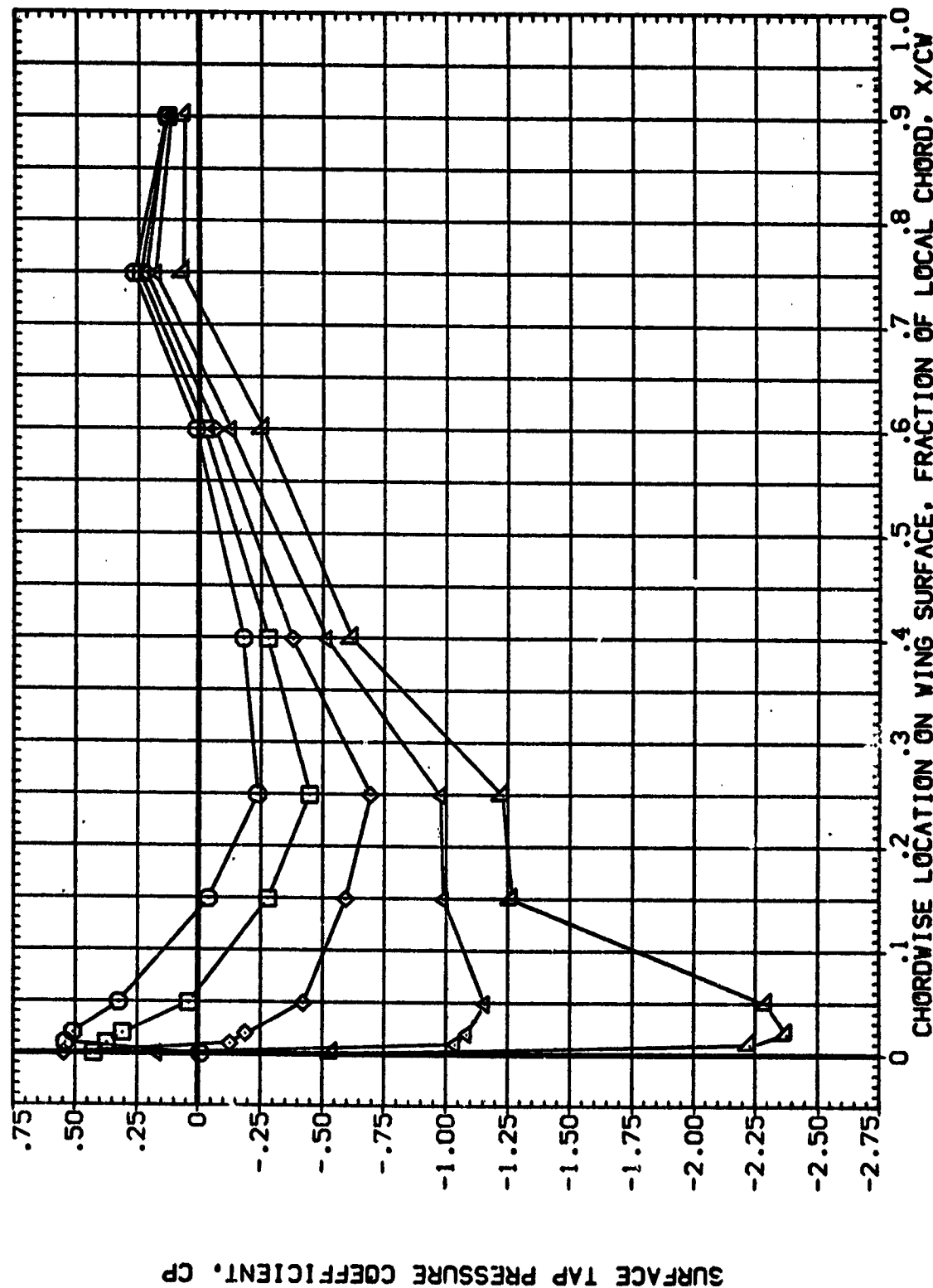


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.372	-8.000	80FLAP	-5.000 SPOBRK
◇	.000			R-ELVN	16.300 L-ELVN
□	4.000				-10.000 MACH
△	8.000				
▽	12.000				

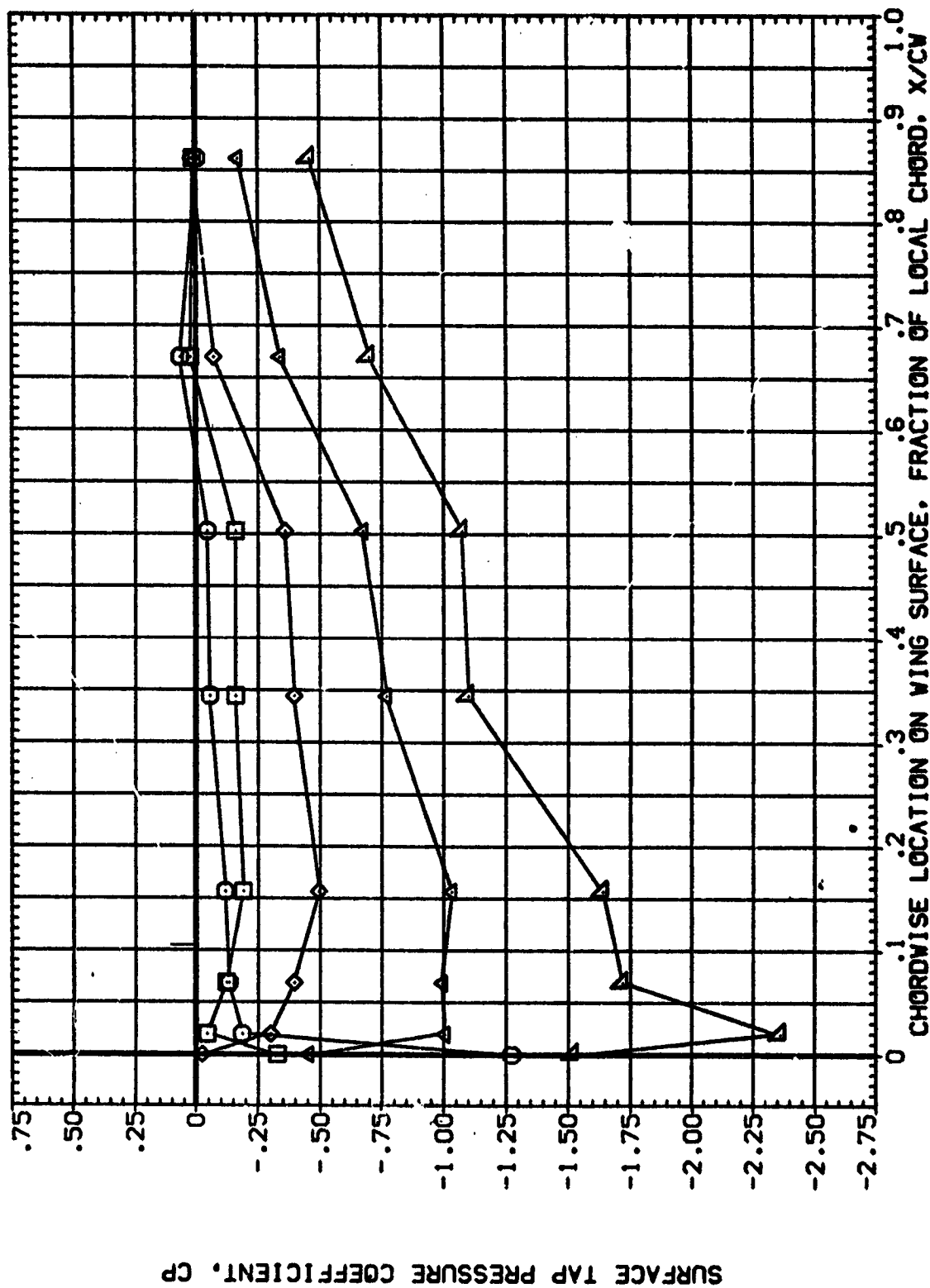


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	PARAMETRIC VALUES	
	RUDDER	SPDRBK
△	80FLAP	95.000
◇	R-ELVN	-10.000
□		.600
▽		

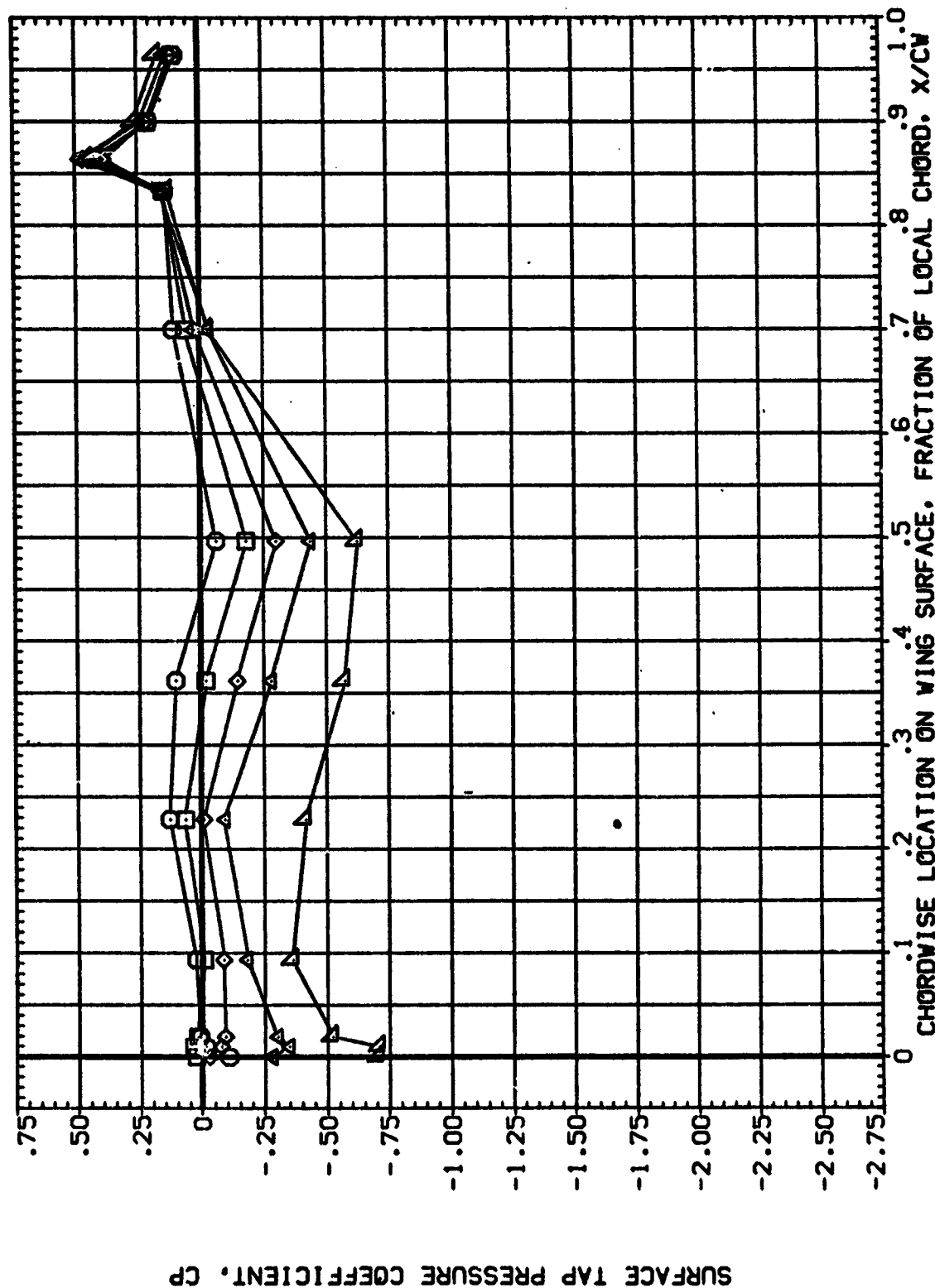


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .427

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPDRK
 L-ELVN
 MACH
 55.000
 -10.000
 .600

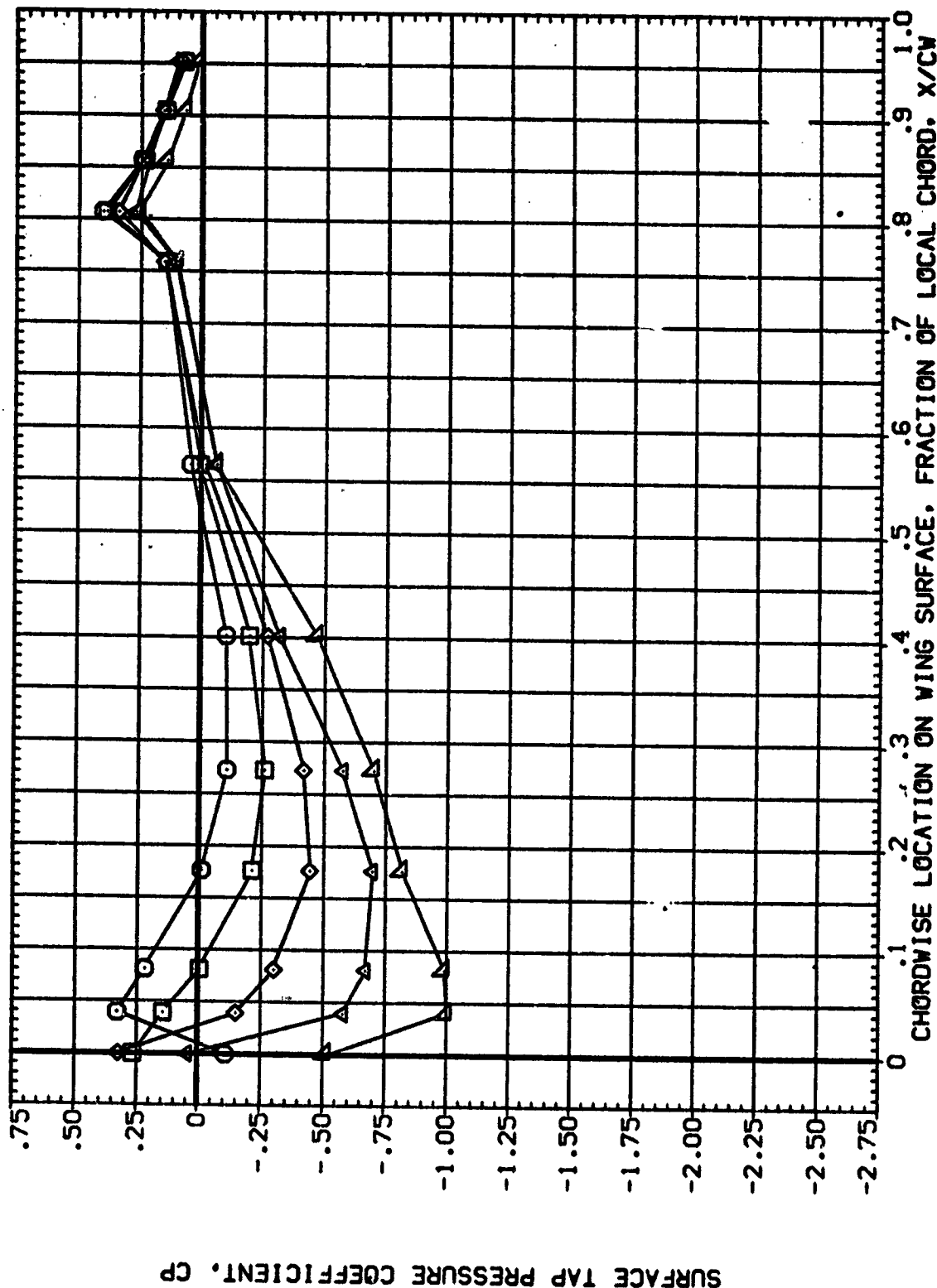


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -14CA/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	ALPHA	2Y/8V	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.673	-4.000	BDFLAP	-5.000
□	.000			R-ELVN	16.300
◇	4.000				L-ELVN
△	8.000				MACH
▽	12.000				
					55.000
					-10.000
					.600

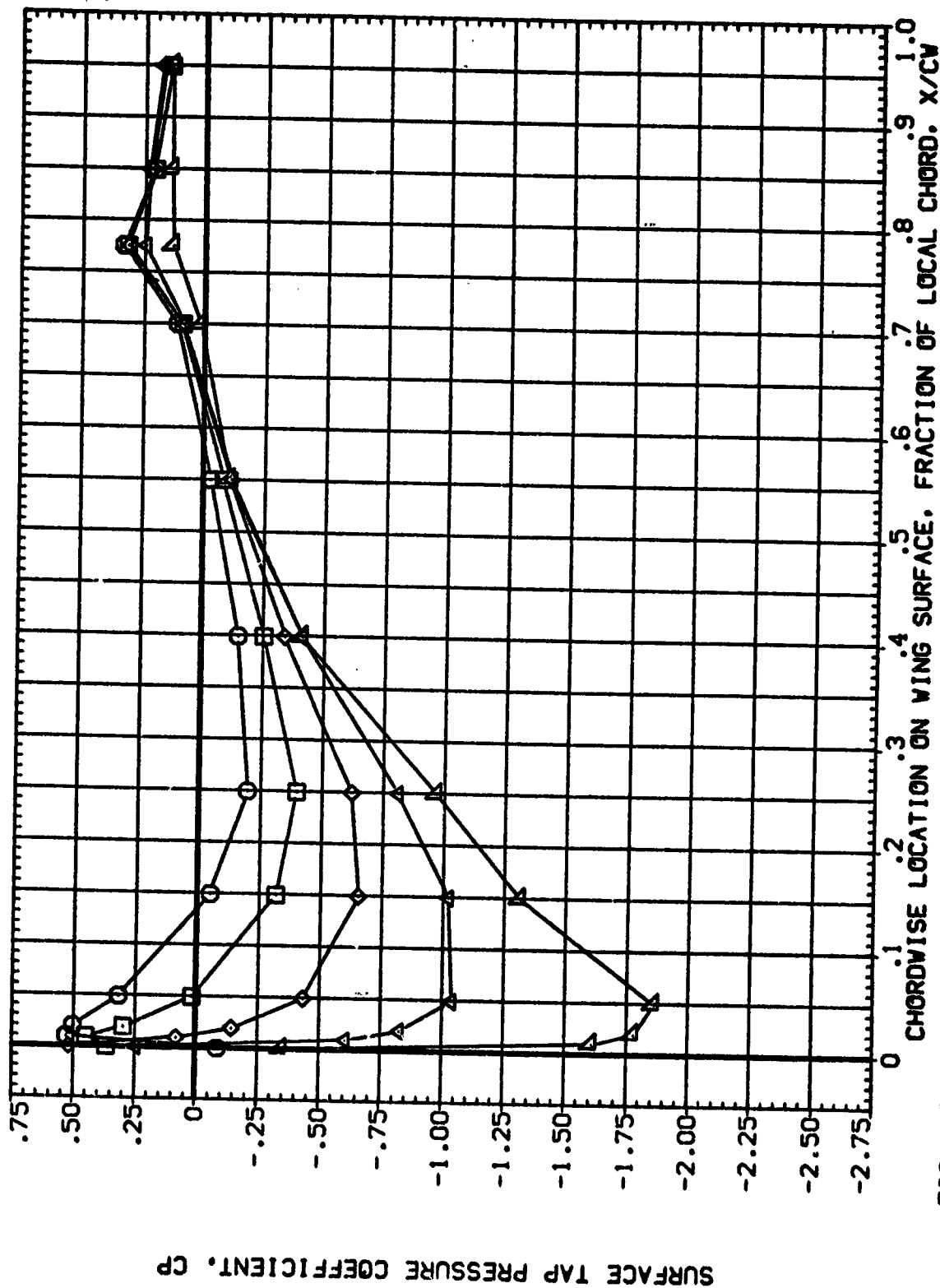


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	ALPHA	2T/BN	BETA	PARAMETRIC VALUES
▽	-4.000	.887	-4.000	SS.000
◇	.000			-5.000
□	4.000			16.300
△	8.000			-10.000
	12.000			MACH
				.600

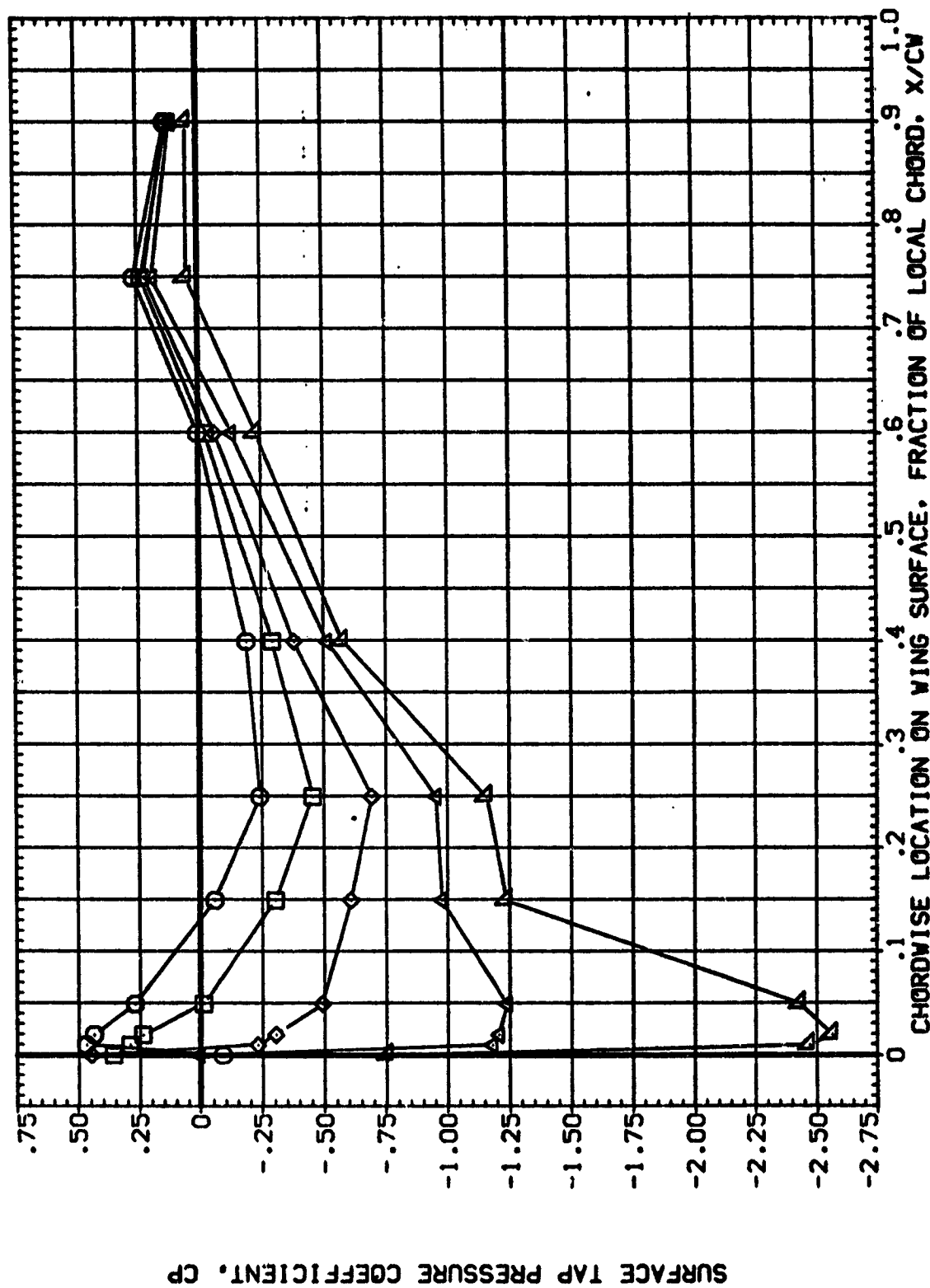


FIG. 12 LEFT WING TOP SURFACE

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.972	-4.000	BOFLAP	-5.000
◇	.000			R-ELVN	16.300
△	4.000			L-ELVN	-10.000
▲	8.000			MACH	.600
	12.000				

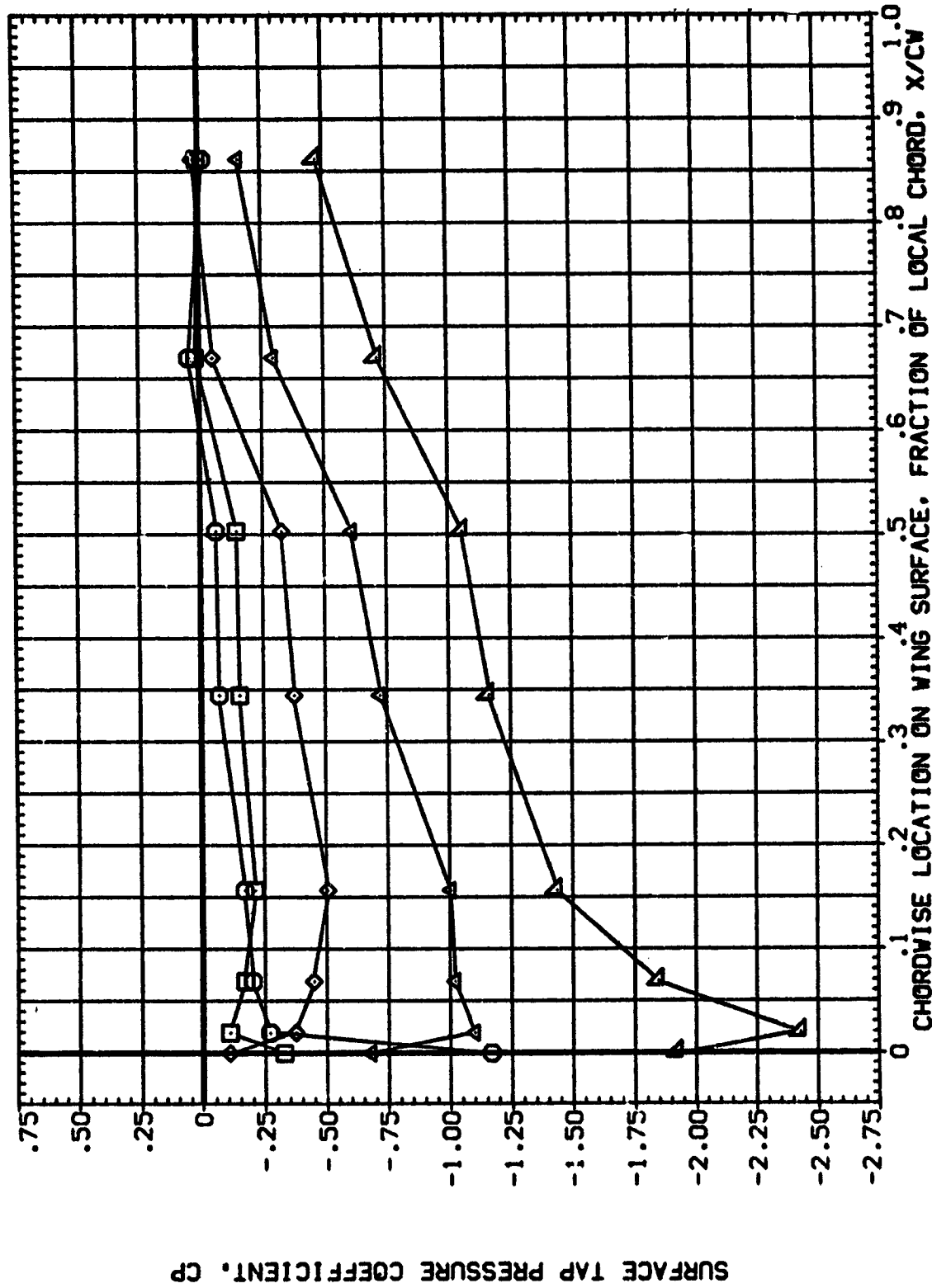


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	ALPHA	21/BN	BETA	RUDDER	PARAMETRIC VALUES	55.000
▽	-4.000	.299	.000	BOFLAP	-5.000	SPDBRK
◇	.000			R-ELVN	16.300	L-ELVN
□	4.000				-10.000	MACH
△	8.000					.600
	12.000					

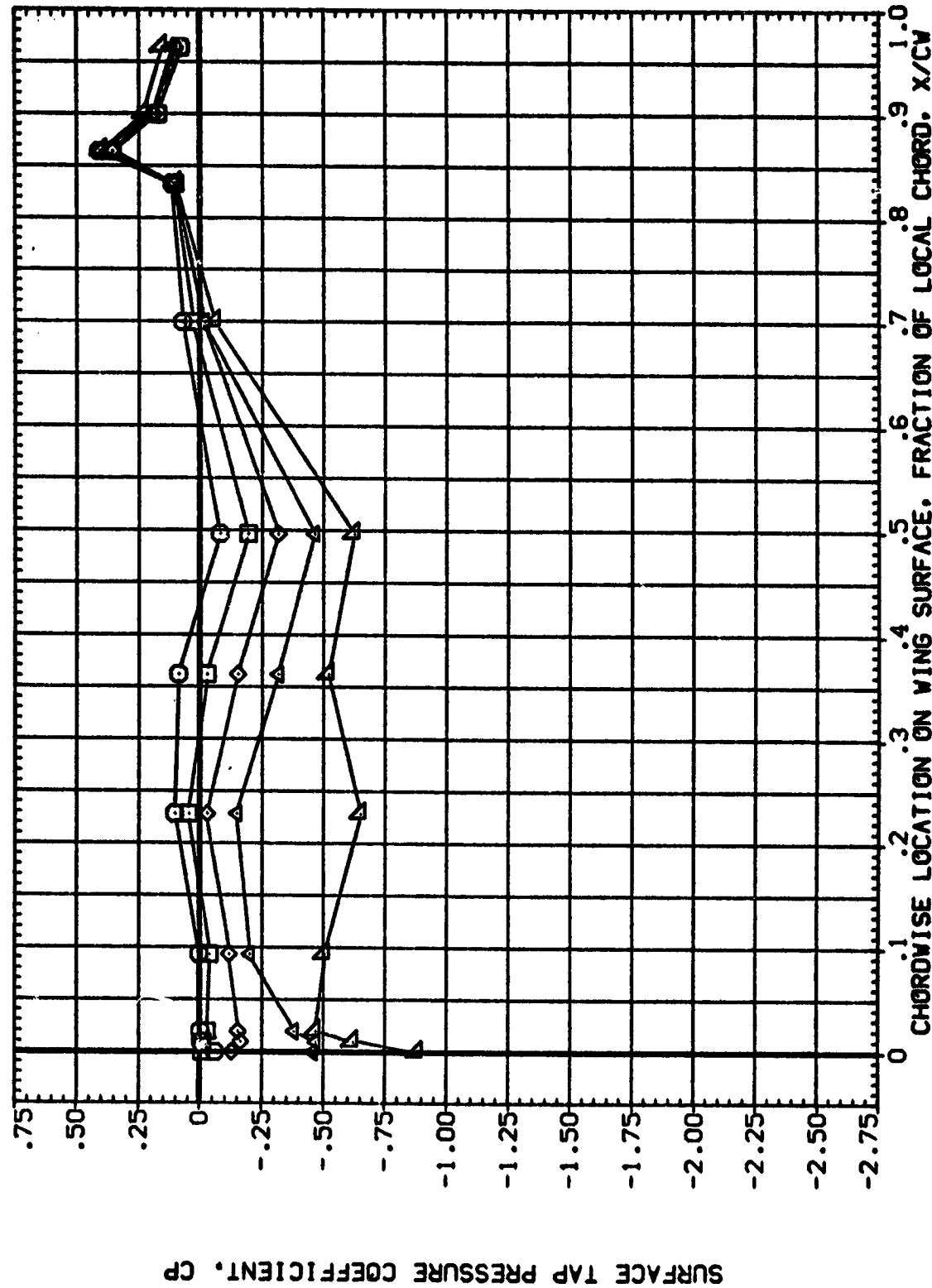


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

Symbol 

ALPHA
-4.000
.000
4.000
8.000
12.000

BETA .000
MB/AV .427

RUDDER	-5.000	SPDRX
BOFLAP	16.300	L-ELVN
R-ELVN	-10.000	MACH

PARAMETRIC VALUES	
-5.000	SPDRXK
16.300	L-ELVN
-10.000	NACH
55.000	
-10.000	
.600	

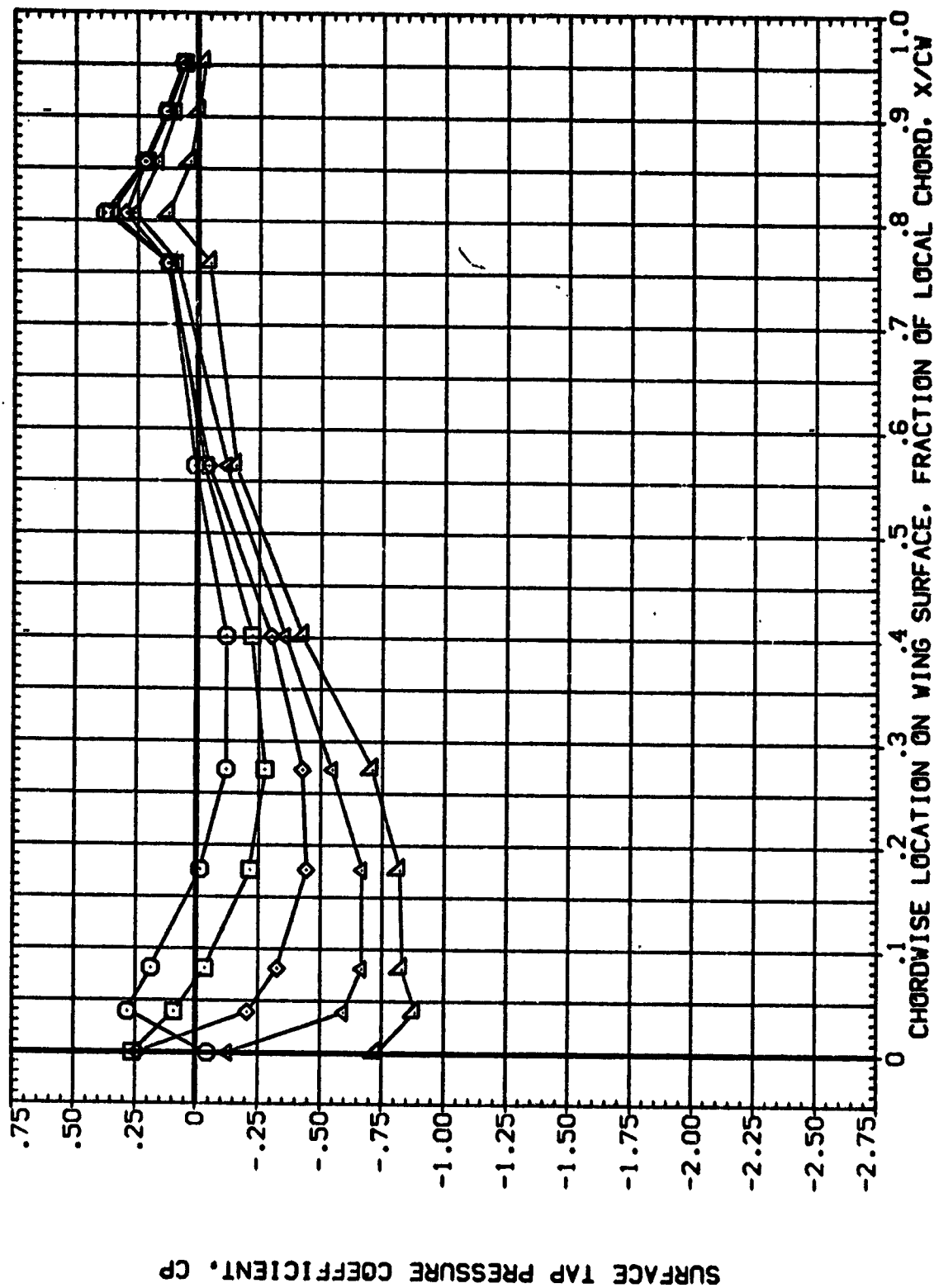


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.673	.000	80FLAP	-5.000 SPDRK 55.000
□	.000			R-ELVN	16.300 L-ELVN -10.000
◇	4.000				-10.000 MACH .800
△	12.000				

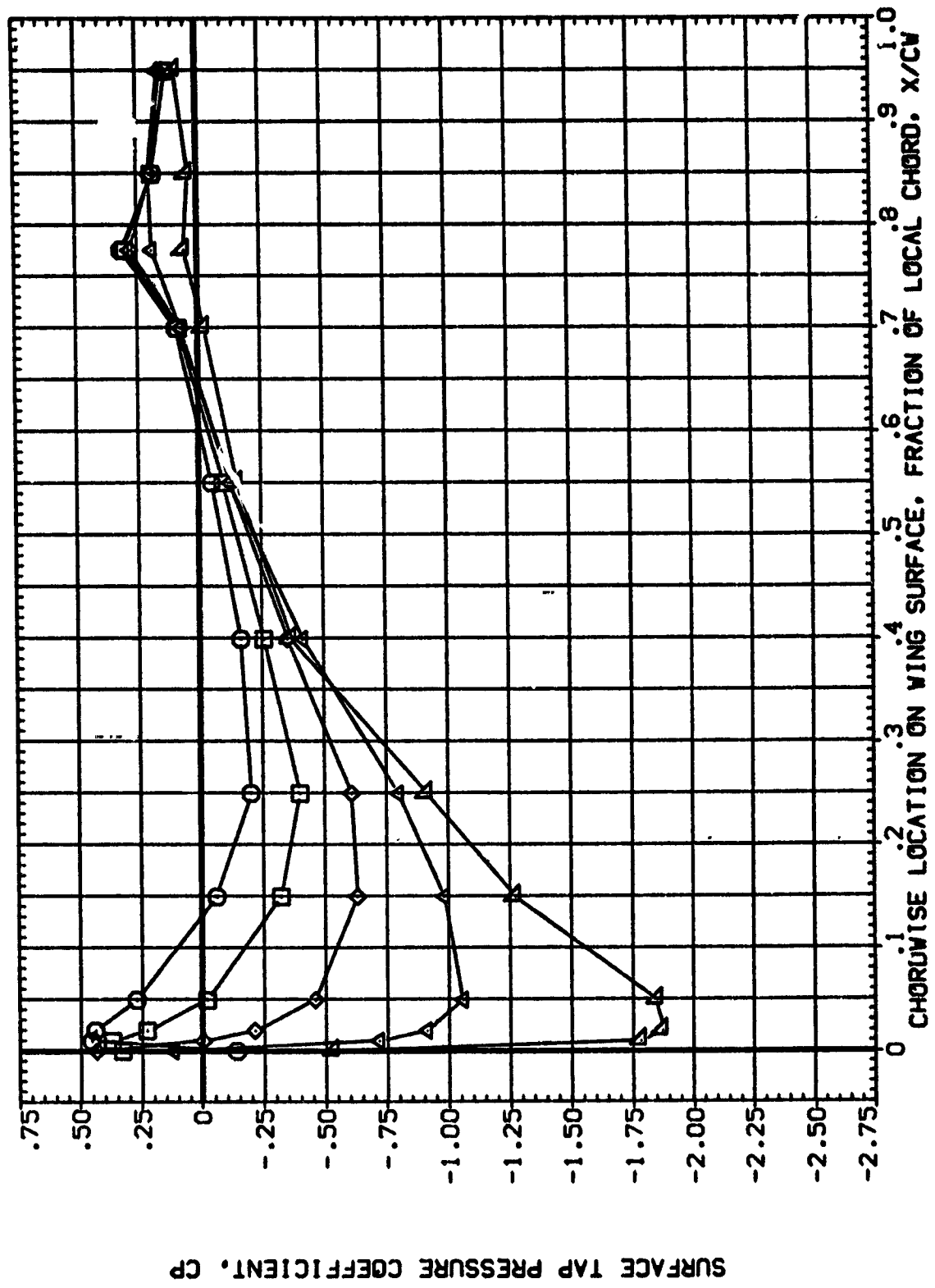


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

REPRODUCIBILITY OF THE
ORIGINAL PAGE IS POOR

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U75)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA 27/8V BETA
 -4.000 .000
 .000 .000
 4.000 .000
 8.000 .000
 12.000 .000

PARAMETRIC VALUES
 RUDDER -5.000 SPDBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

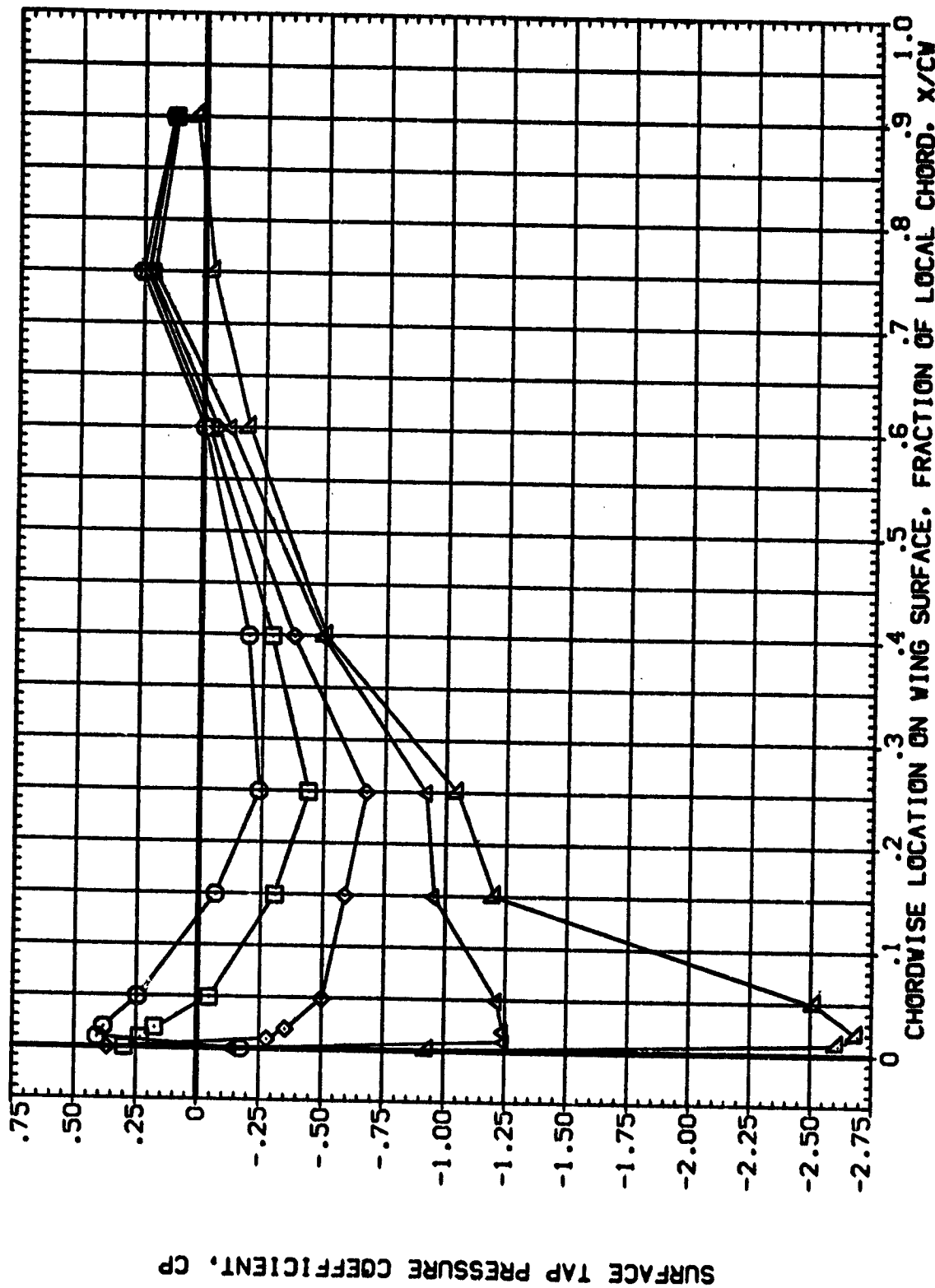


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	PARAMETRIC VALUES	
	RUDDER	SPDRK
▽	BDFLAP	16.300
◇	R-ELVN	-10.000
□		MACH
△		.600

PARAMETRIC VALUES	
ALPHA	BETA
-4.000	.000
.000	
4.000	
8.000	
12.000	

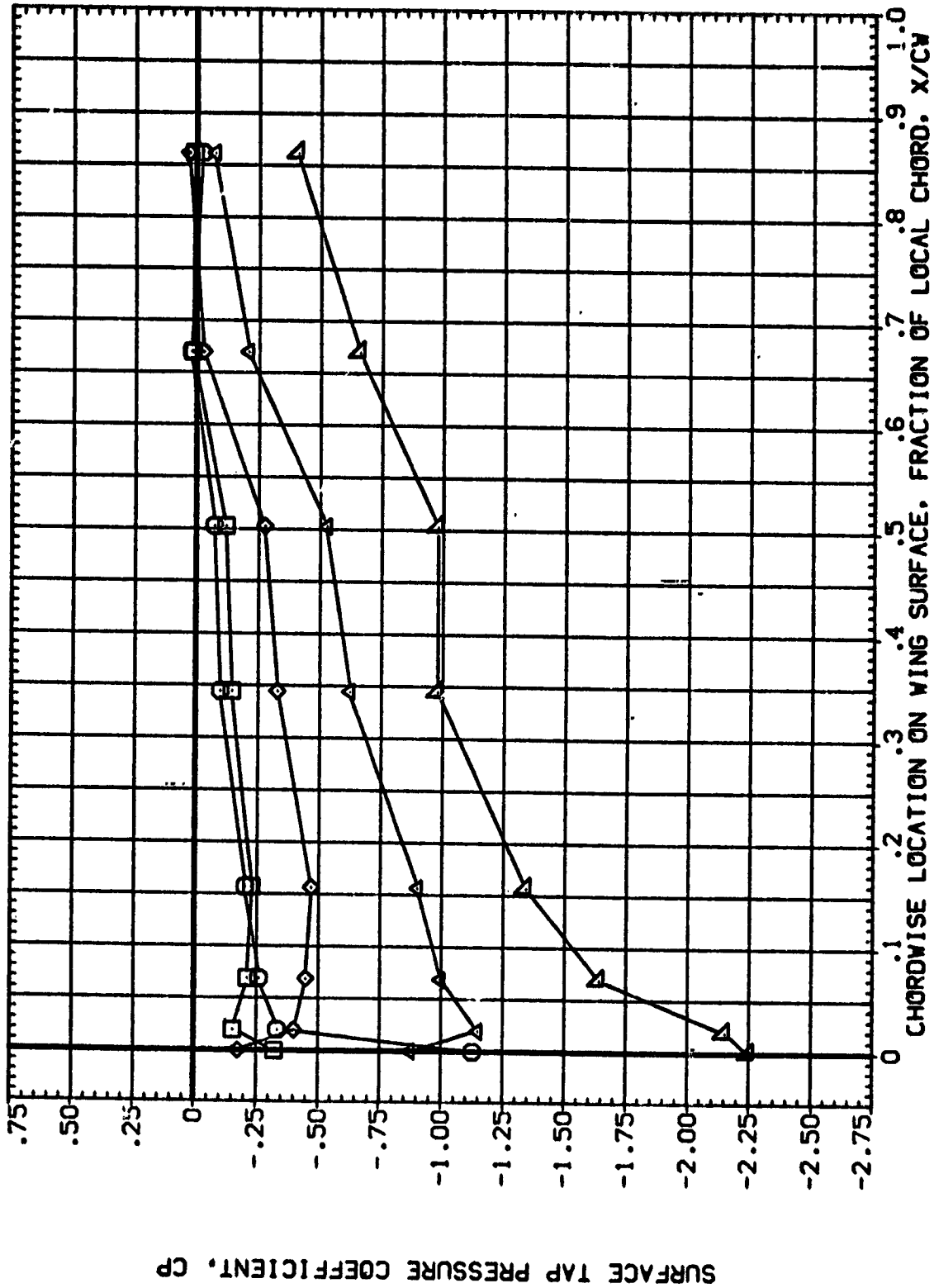


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.299	4.000	BDFLAP	-5.000 SPOBRK 55.000
△	.000			R-ELVN	16.300 L-ELVN -10.000
◇	4.000				-10.000 MACH .600
□	8.000				
○	12.000				

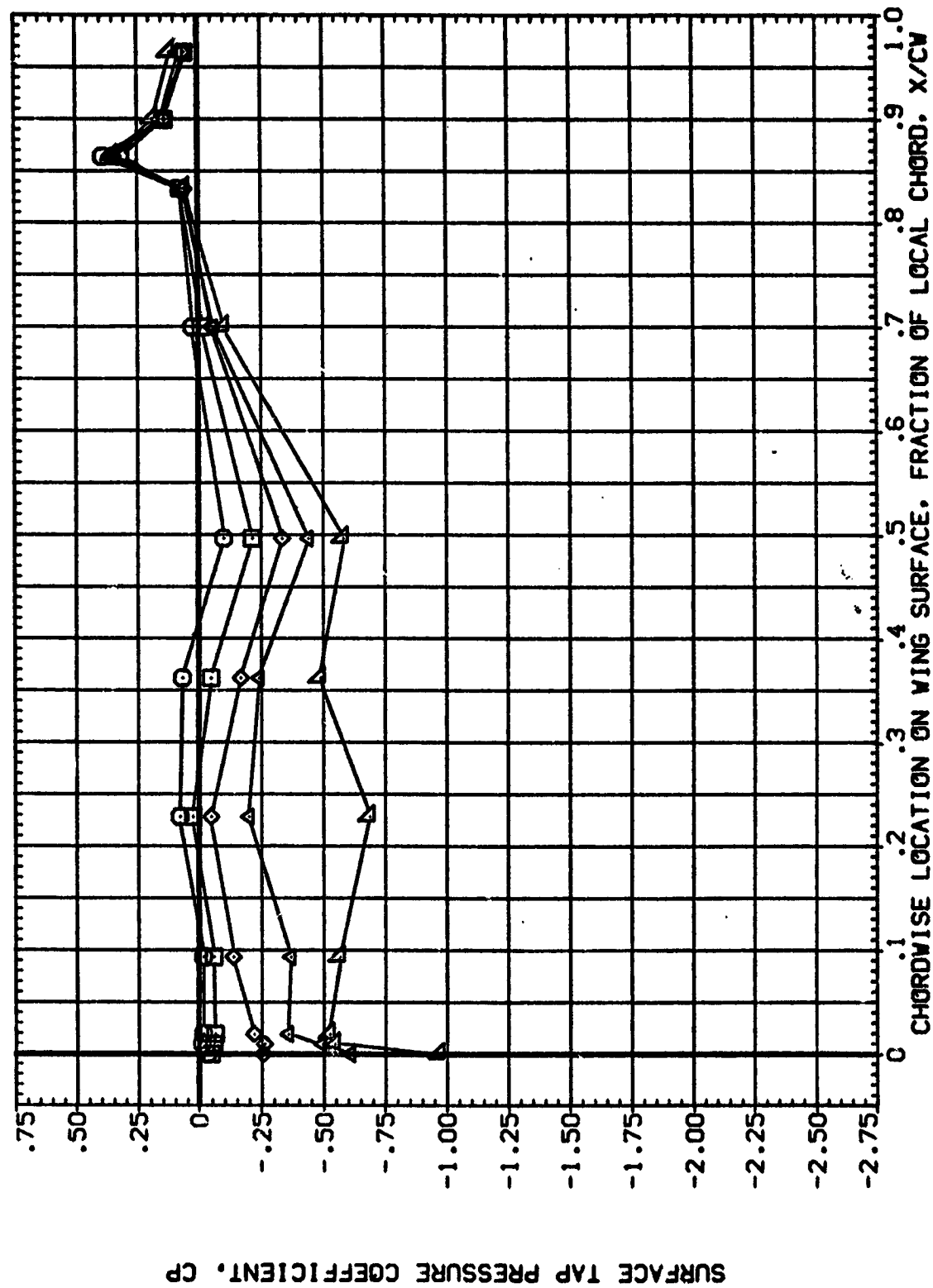


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	ALPHA	2Y/8V	BETA	RUDDER	PARAMETRIC VALUES		
○	-4.000	.427	4.000	BOFLAP	-5.000	SPOBRK	55.000
□	.000			R-ELVN	16.300	L-ELVN	-10.000
◇	4.000				-10.000	MACH	.600
△	8.000						
▽	12.000						

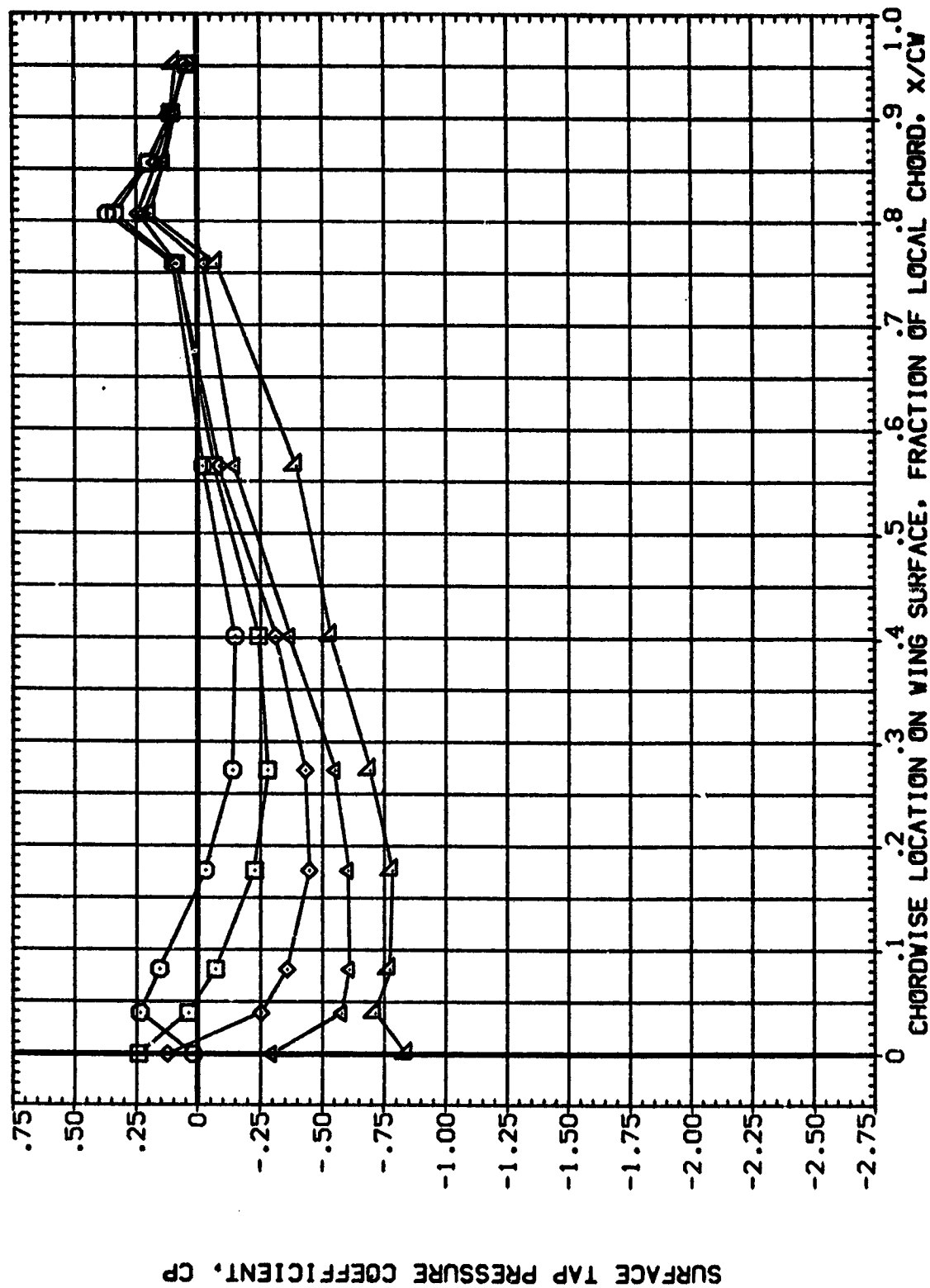


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	ALPHA	2Y/8V	BETA	RUDER	PARAMETRIC VALUES
○	-4.000	.673	4.000	80FLAP	-5.000 SPOBRK 55.000
□	.000			R-ELVN	16.300 L-ELVN -10.000
◇	4.000				-10.000 MACH .600
△	8.000				
▽	12.000				

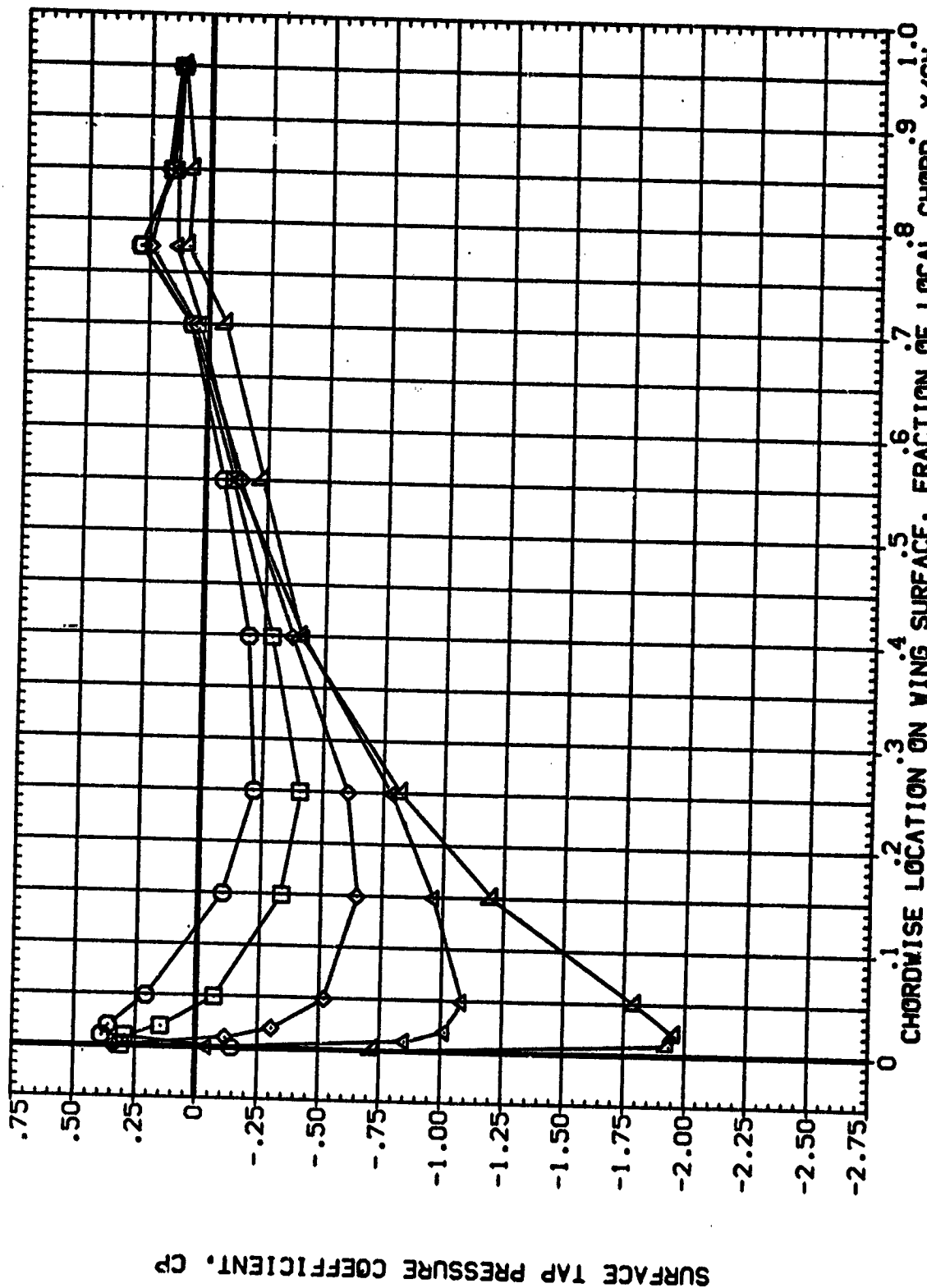


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	ALPHA	2Y/8V	BETA	PARAMETRIC VALUES
▽	-4.000	.887	4.000	RUDDER
◇	.000			BOFLAP
□	4.000			R-ELVN
△	8.000			-10.000
▽	12.000			MACH
				.600

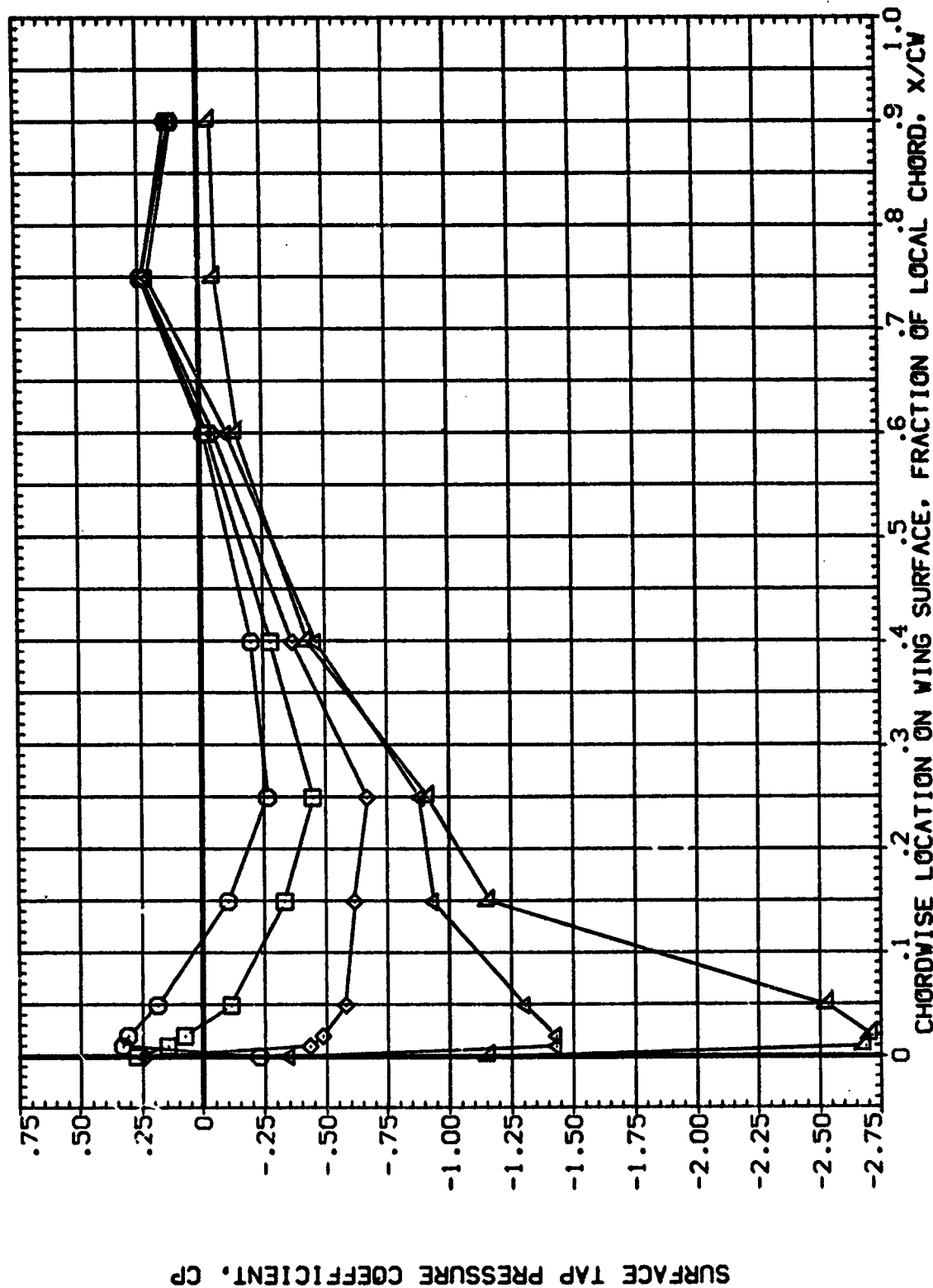


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	ALPHA	2Y/8V	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRBK	L-ELVN	MACH
▽	-4.000	.972	4.000	BOFLAP	-5.000	-10.000	55.000
◇	.000			R-ELVN	16.300	-10.000	-10.000
□	4.000						.600
△	8.000						
▽	12.000						

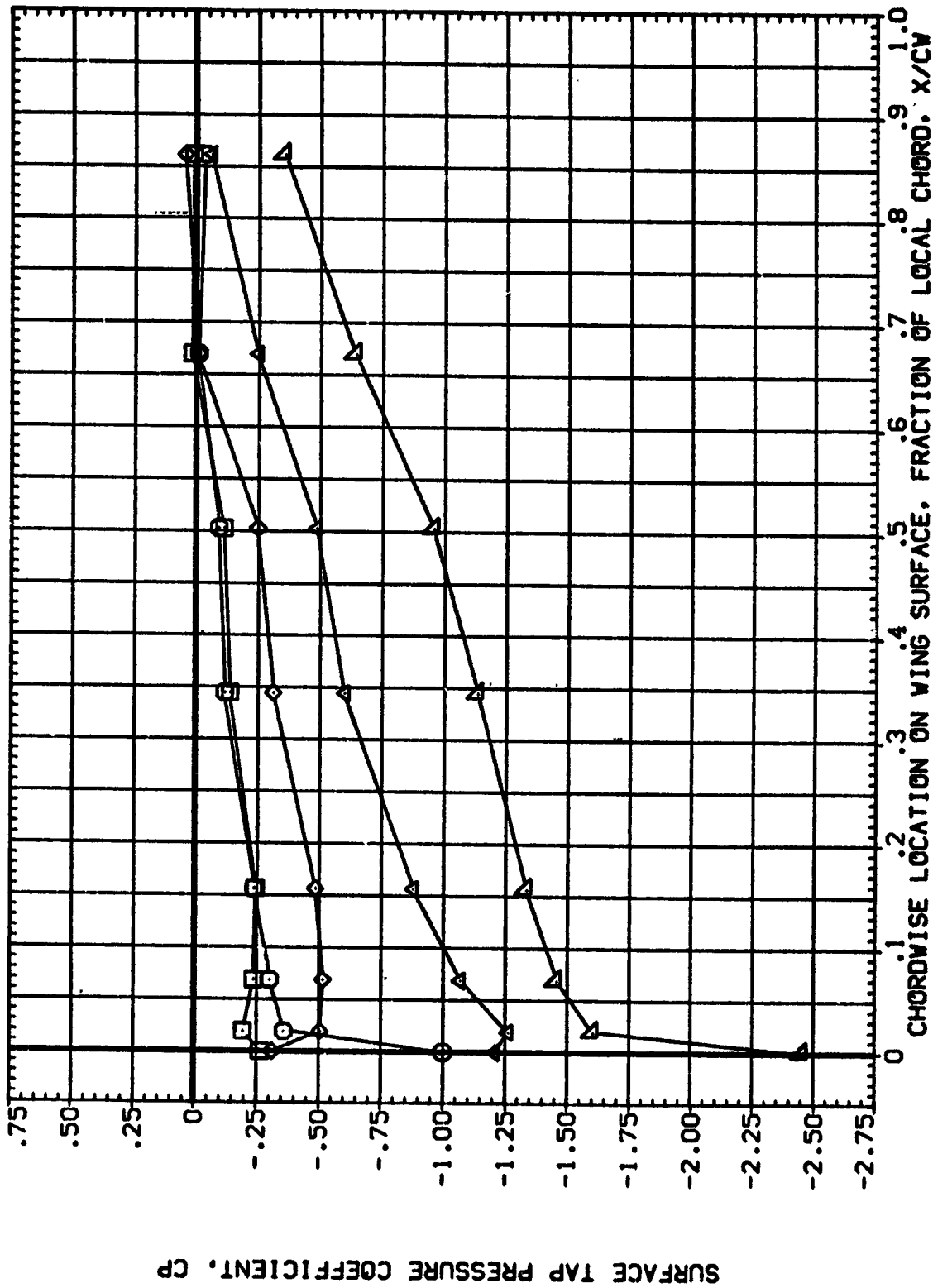


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

BETA
 8.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDRK
 16.300 L-ELVN
 -10.000 MACH

55.000
 -10.000
 .600

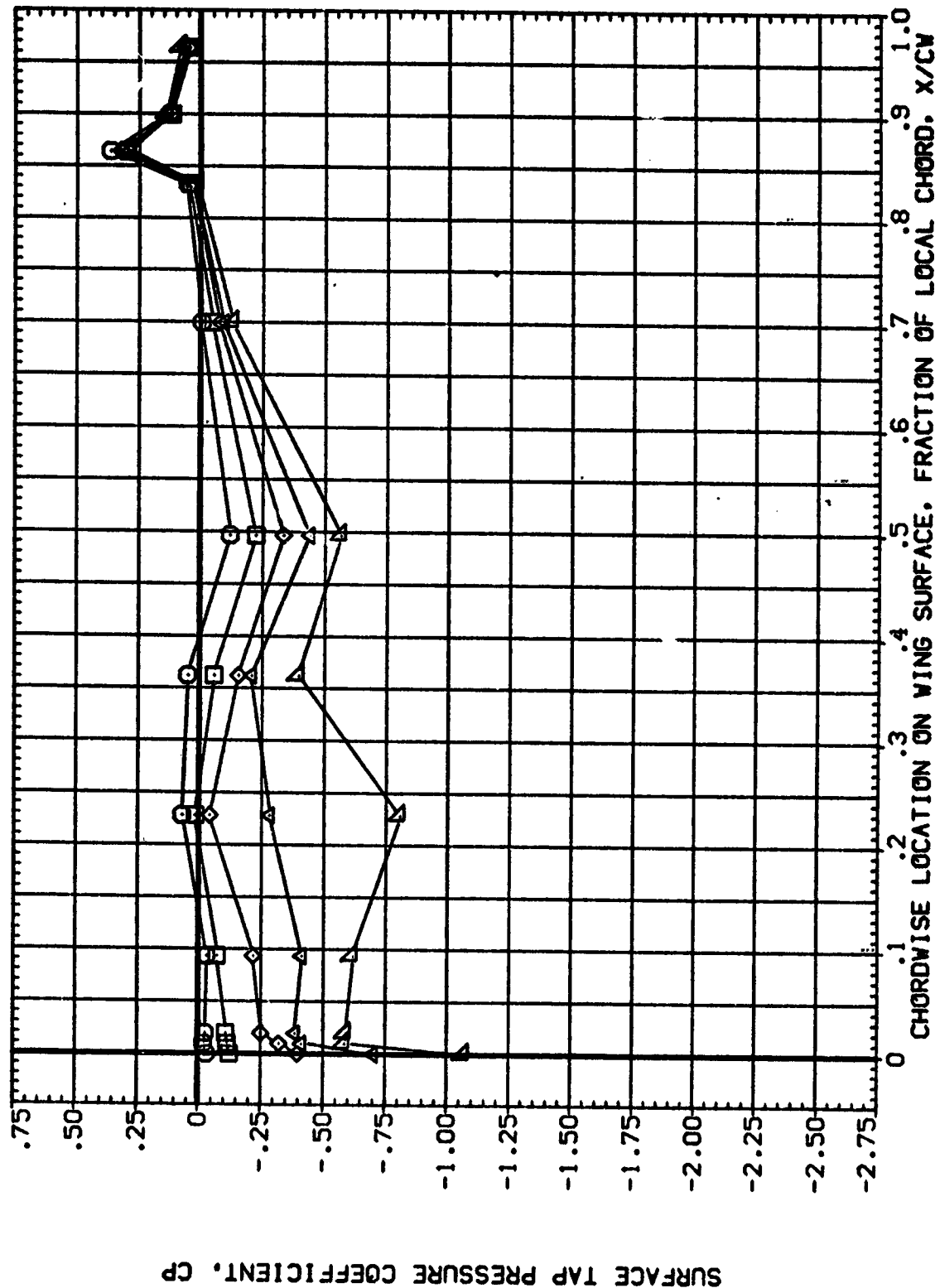


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL
 ○ □ ◇ △

ALPHA 2Y/BN BETA
 -4.000 .427 8.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

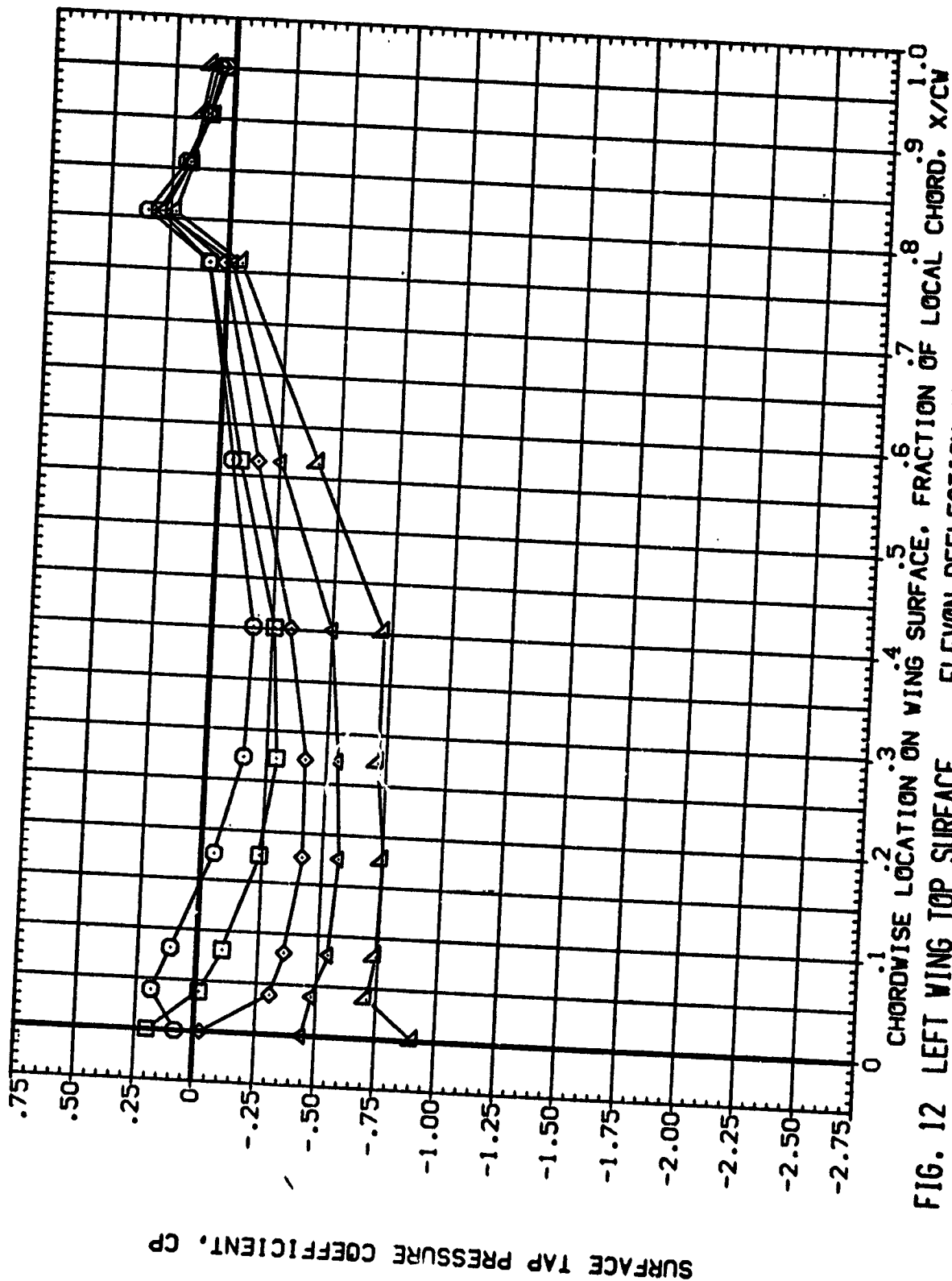


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

PARAMETRIC VALUES
 RUDDER -5.000 SPOBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .600

SYMBOL ALPHA 2Y/8V BETA
 □ -4.000 .673 8.000
 ◇ .000
 △ 4.000
 ▽ 8.000
 ▴ 12.000

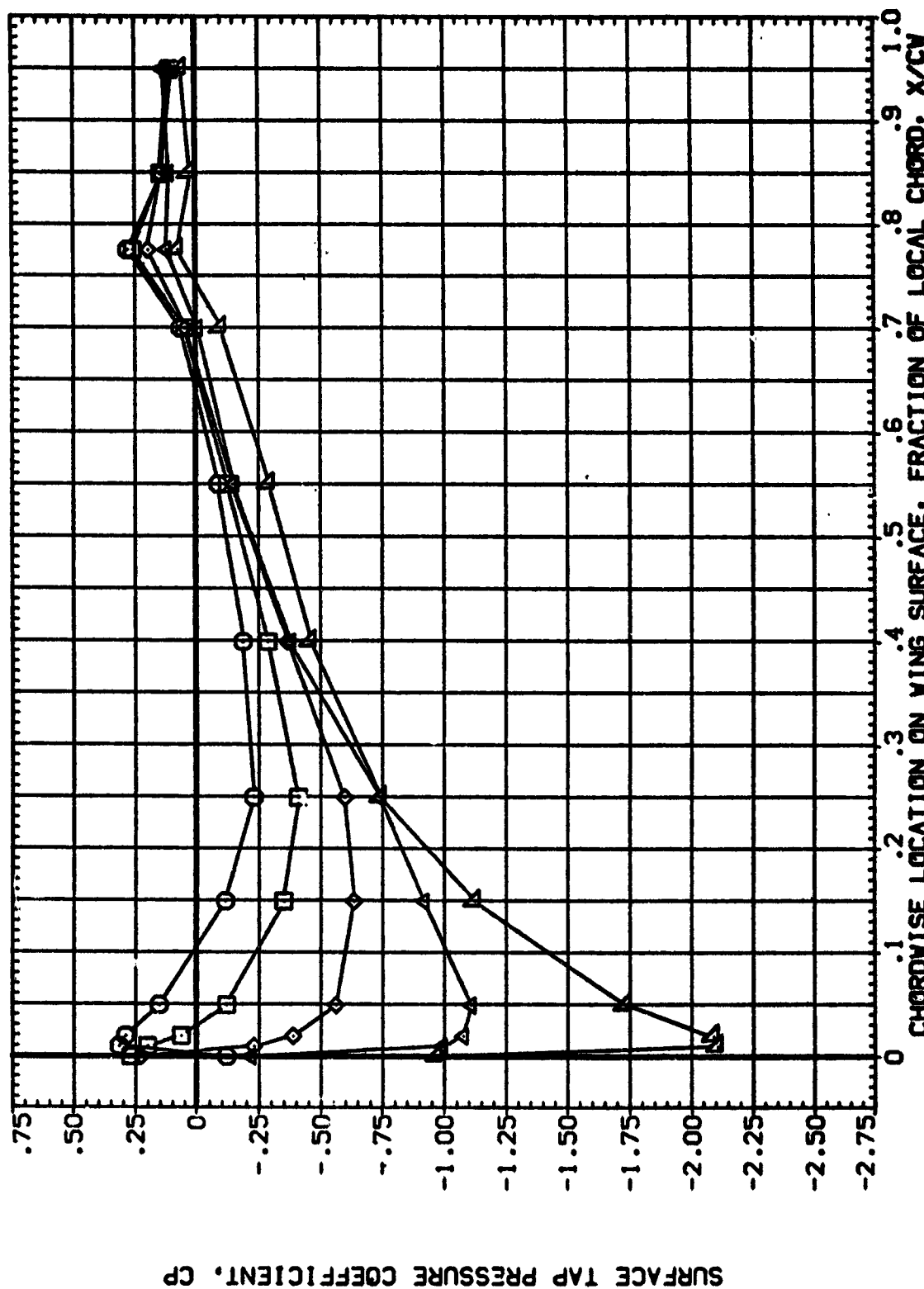


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
○	-4.000	.687	8.000	RUDDER
□	.000			BDFLAP
◇	4.000			R-ELVN
△	8.000			-5.000
	12.000			16.300
				-10.000
				MACH
				.600

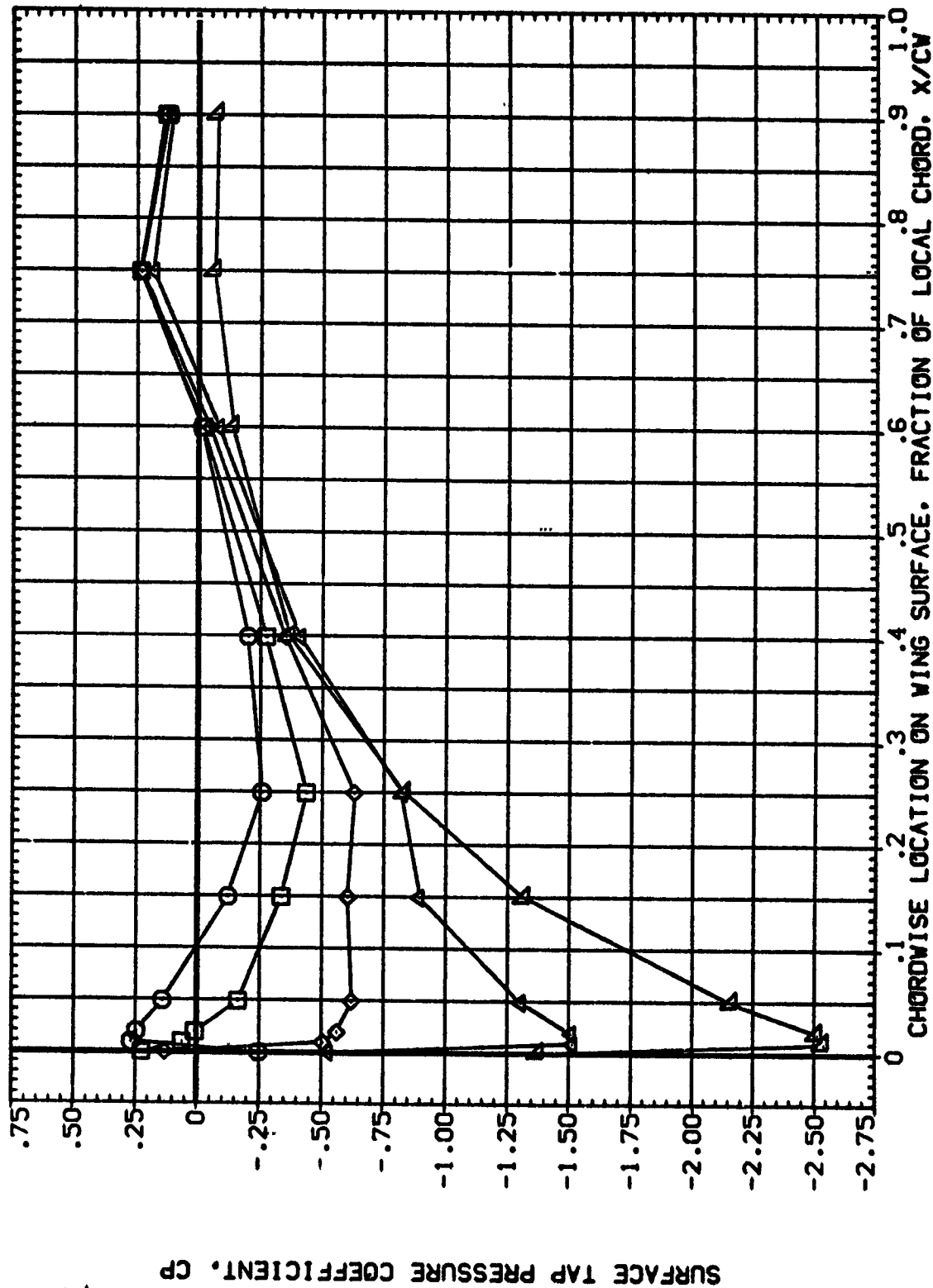


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U75)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2T/8N
 .972

BETA
 8.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 .600

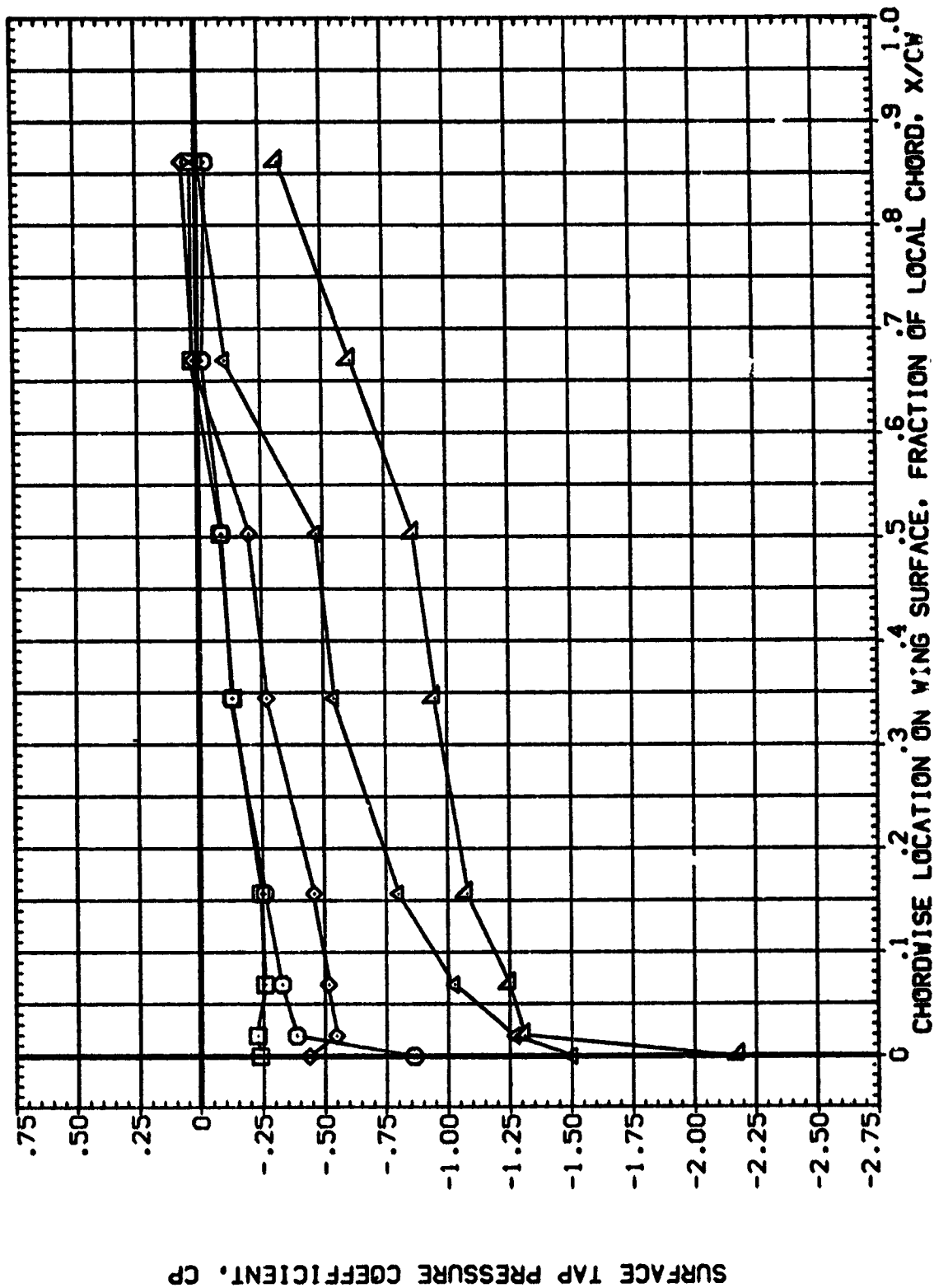


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 0, 3, 6, 9 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U74)

SYMBOL	ALPHA	2Y/8V	BETA		PARAMETRIC VALUES
□	-4.000	.299	-4.000	RUDDER	-5.000
◇	.000			BOFLAP	16.300
△	4.000			R-ELVN	-10.000
▽	8.000				MACH
	12.000				.900

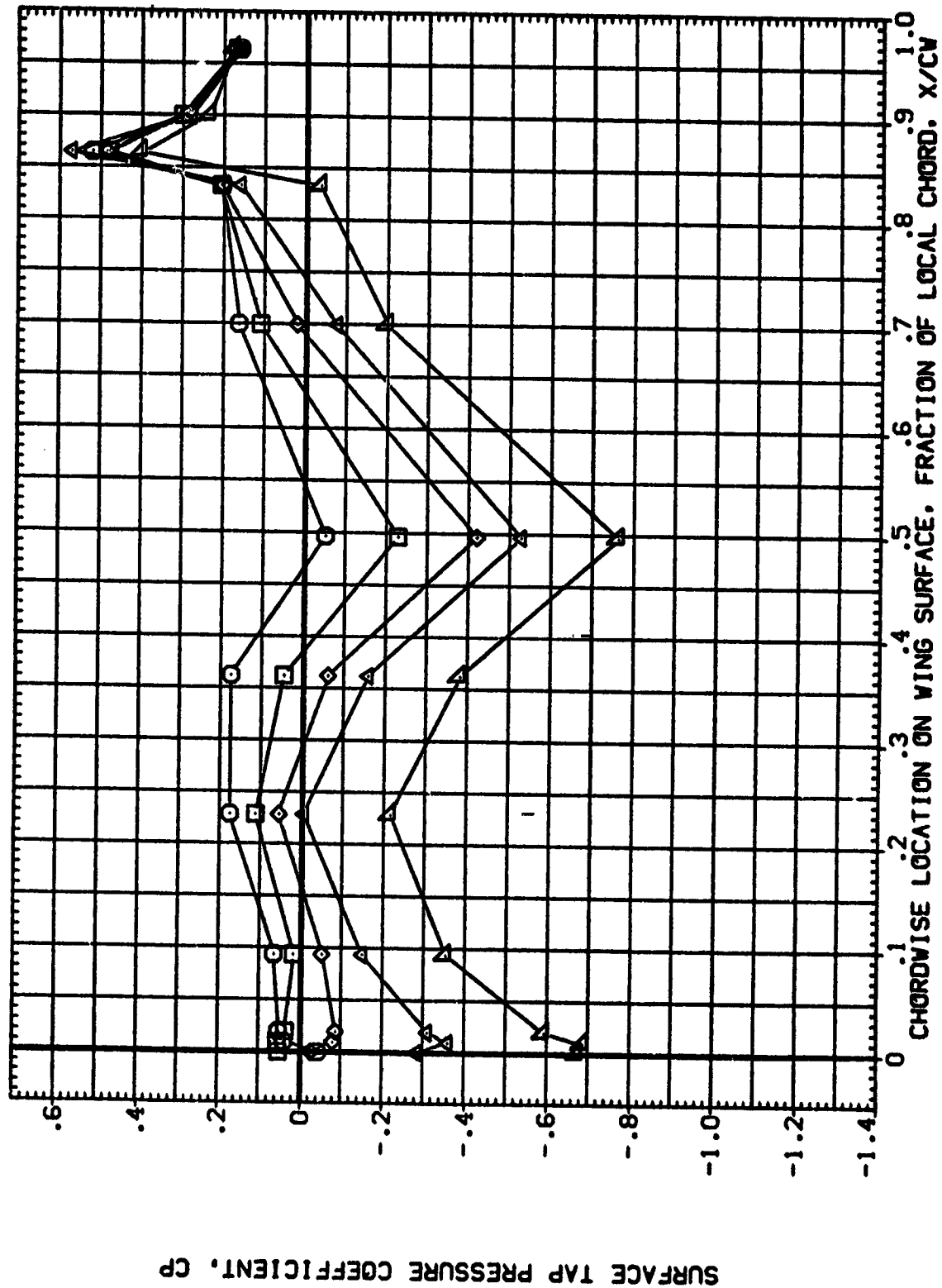
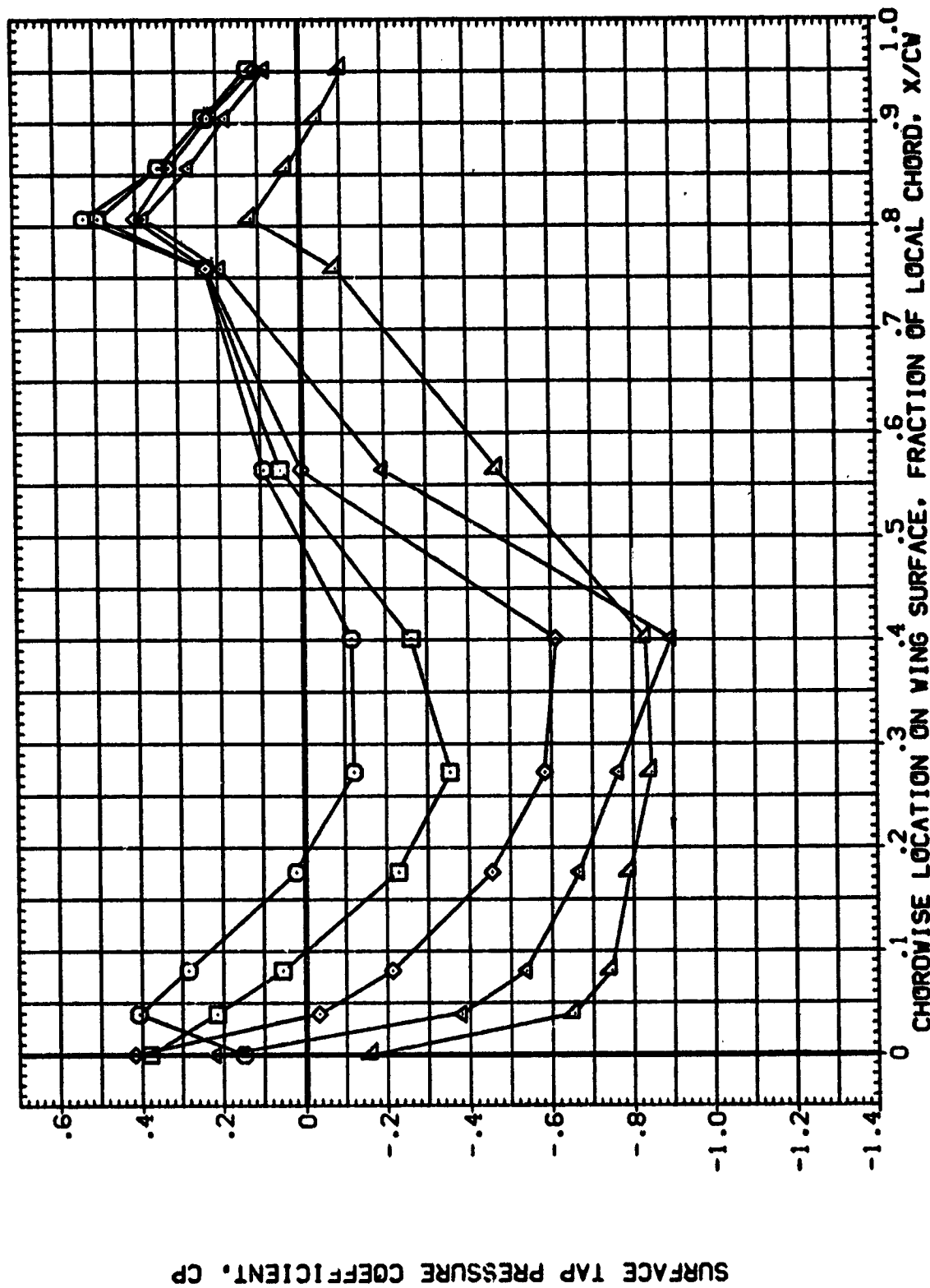


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

ALPHA 21/BN .427 BETA -4.000

SYMBOL
 74.000
 8.000
 12.000



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A1.6) -140A/B/C ORB LEFT WING TOP(IE8U74)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.673	-4.000	80FLAP	-5.000 SPOBRK 55.000
□	.000			R-ELVN	16.300 L-ELVN -10.000
◇	4.000				-10.000 MACH .900
△	8.000				
▽	12.000				

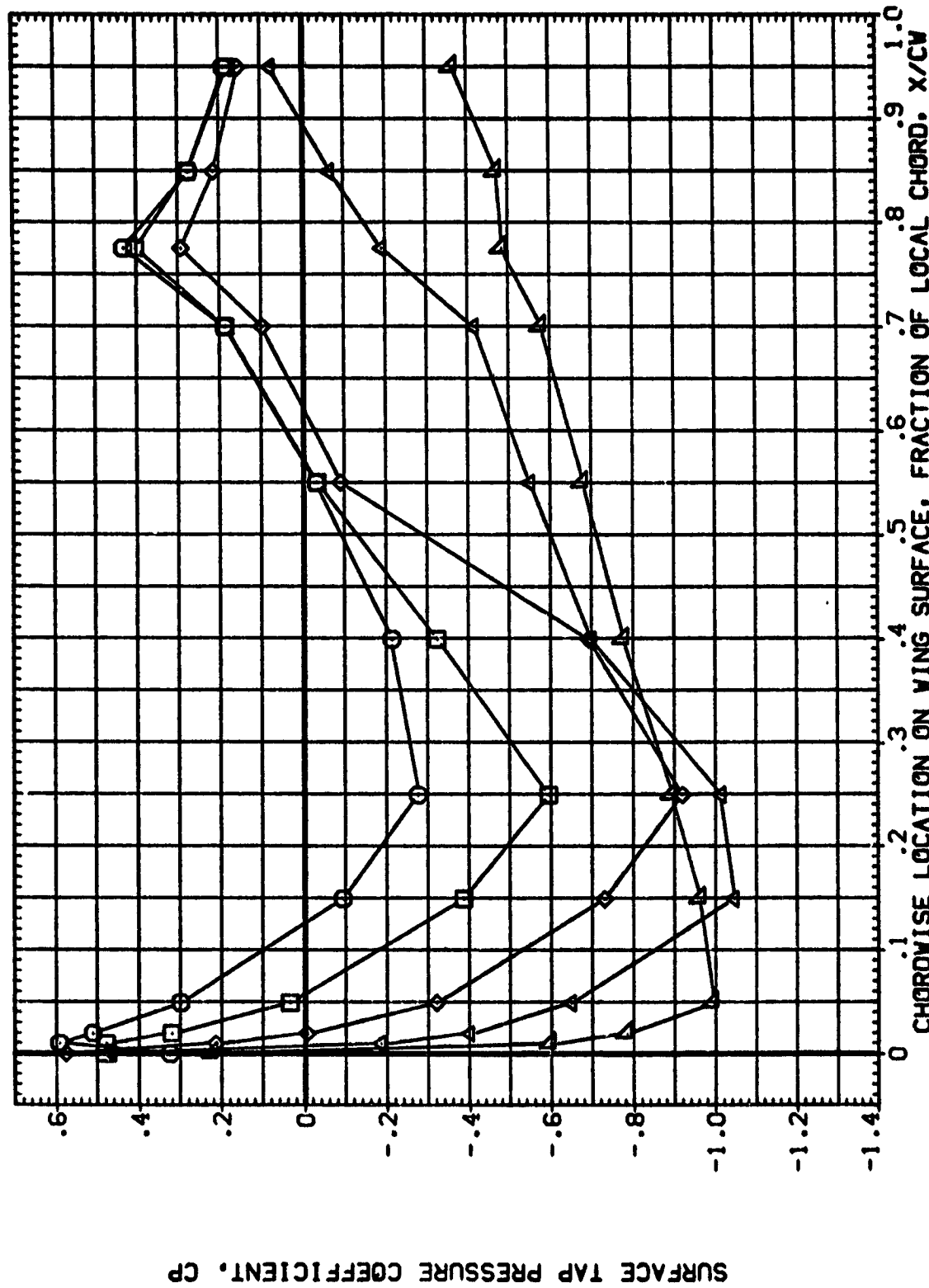


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK -10.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

ALPHA 21/8V BETA
 -4.000 .987 -4.000

SYMBOL
 ▽ ◆ □ ○

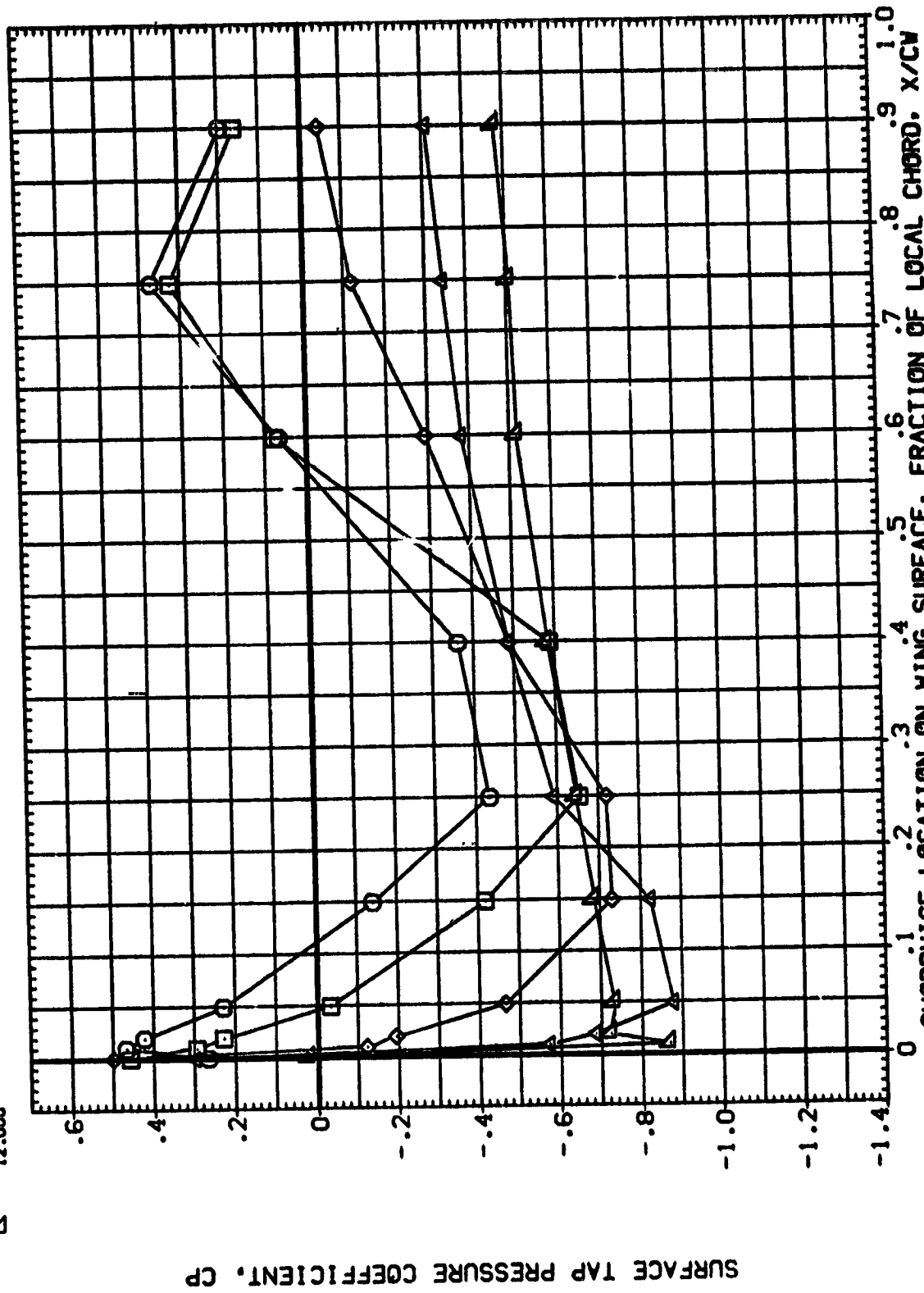


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

SYMBOL	ALPHA	2Y/BV	BETA	PARAMETRIC VALUES	RUDDER	BOFLAP	R-ELVN	SPDRK	L-ELVN	MACH	
○	-4.000	.372	-4.000	-5.000							55.000
□	.000			16.300							-10.000
◇	4.000			-10.000							.900
△	8.000										
▽	12.000										

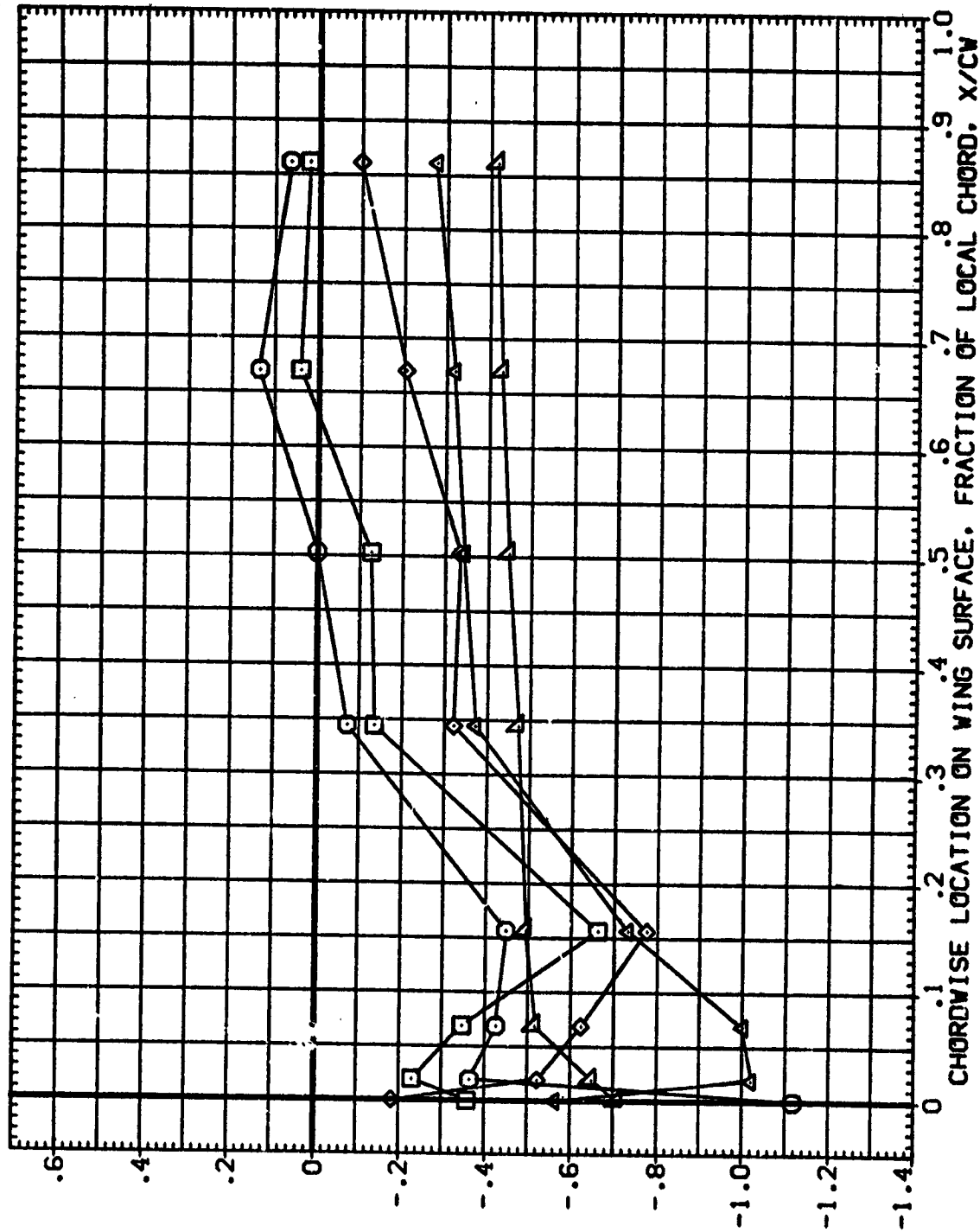


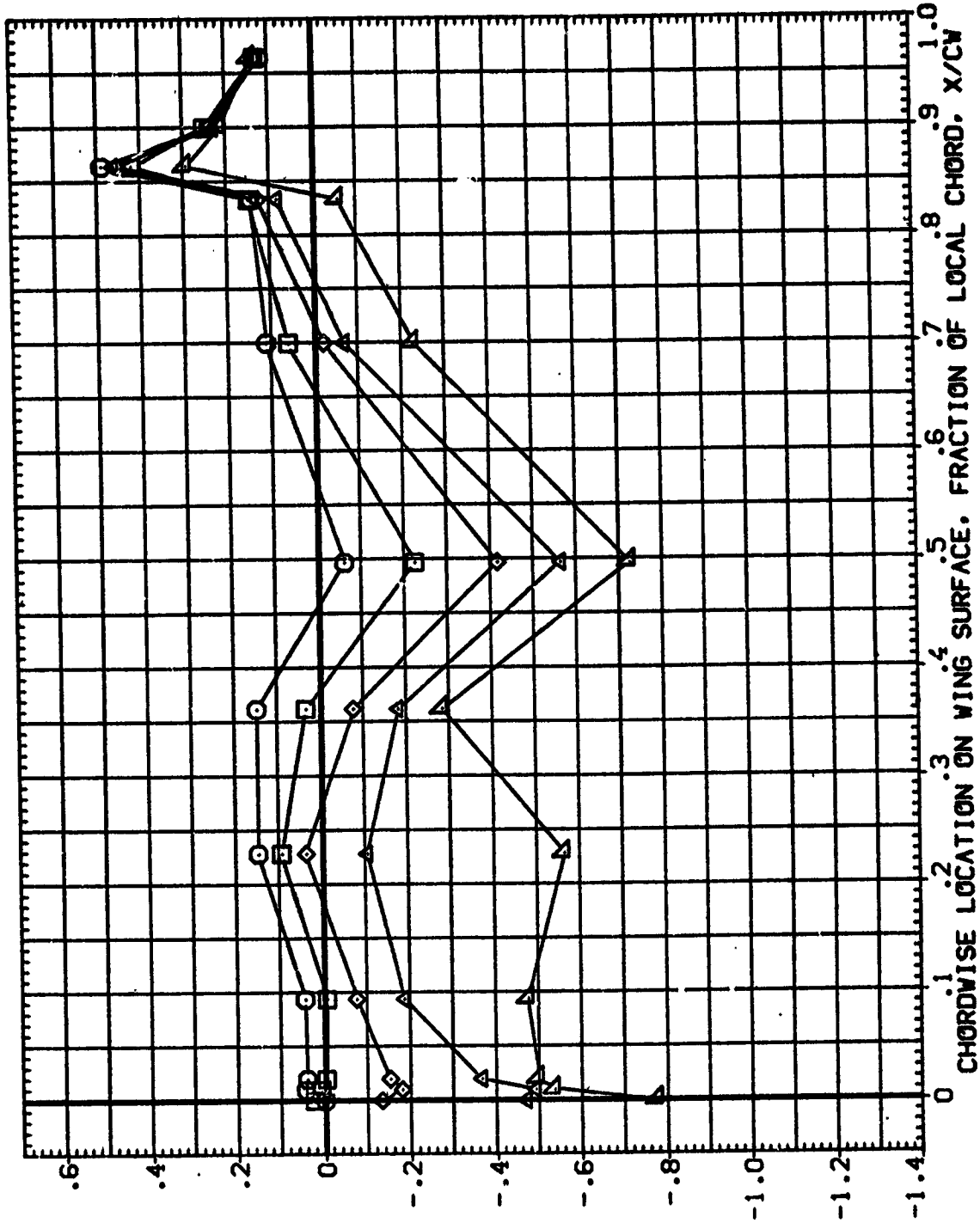
FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

PARAMETRIC VALUES
 RUDDER -5.000 SPOBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .900

ALPHA 2Y/8V BETA
 -4.000 .299 .000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ○ □ ◇ △ ▽



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP (IE8U74)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.427	.000	80FLAP	-5.000
◇	.000			R-ELVN	16.300
△	4.000				L-ELVN
▽	8.000				MACH
	12.000				

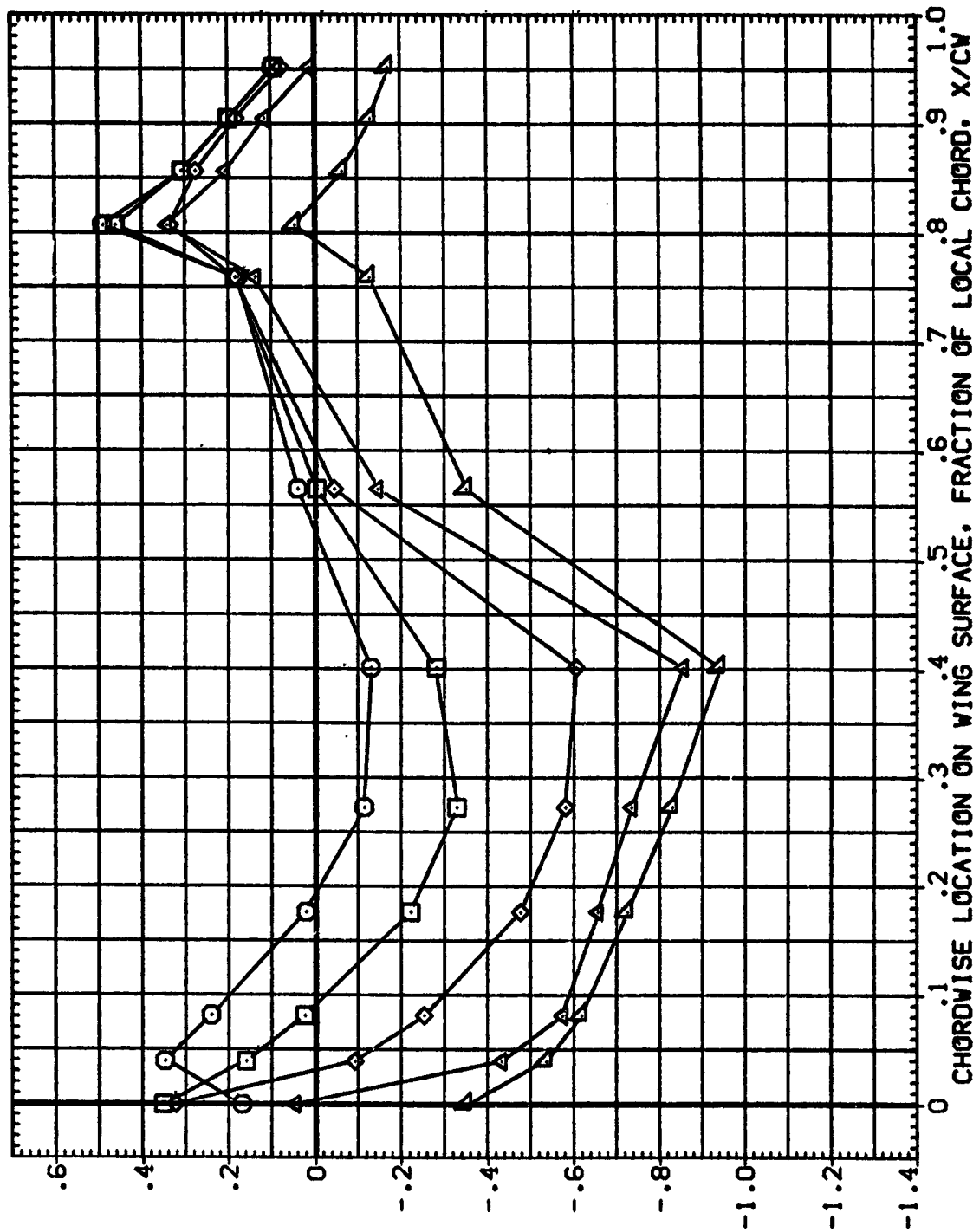


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .673

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 .900

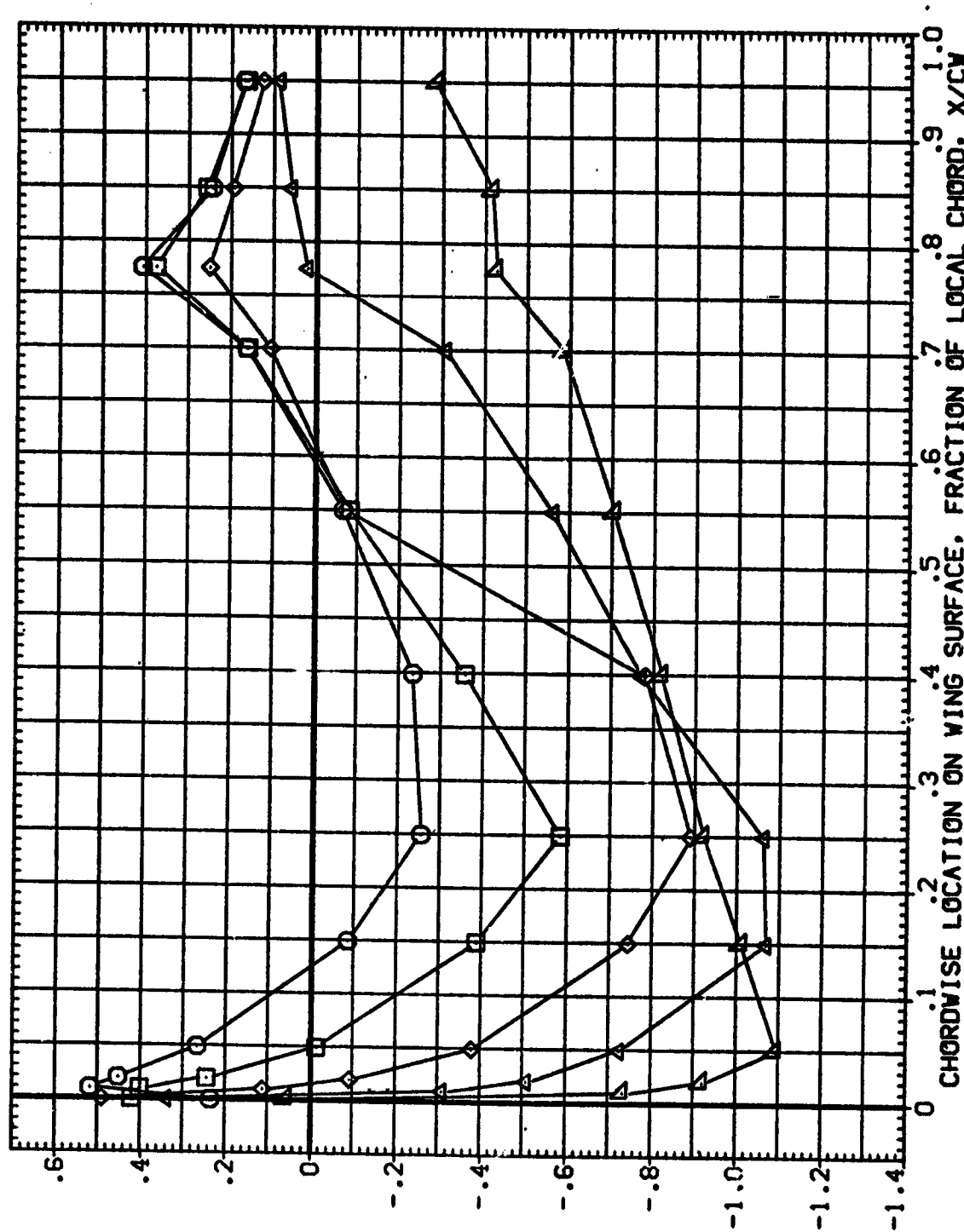


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.887	.000	BDFLAP	-5.000 SPOBRK
◇	.000			R-ELVN	16.300 L-ELVN
□	4.000				-10.000 MACH
△	8.000				
▽	12.000				

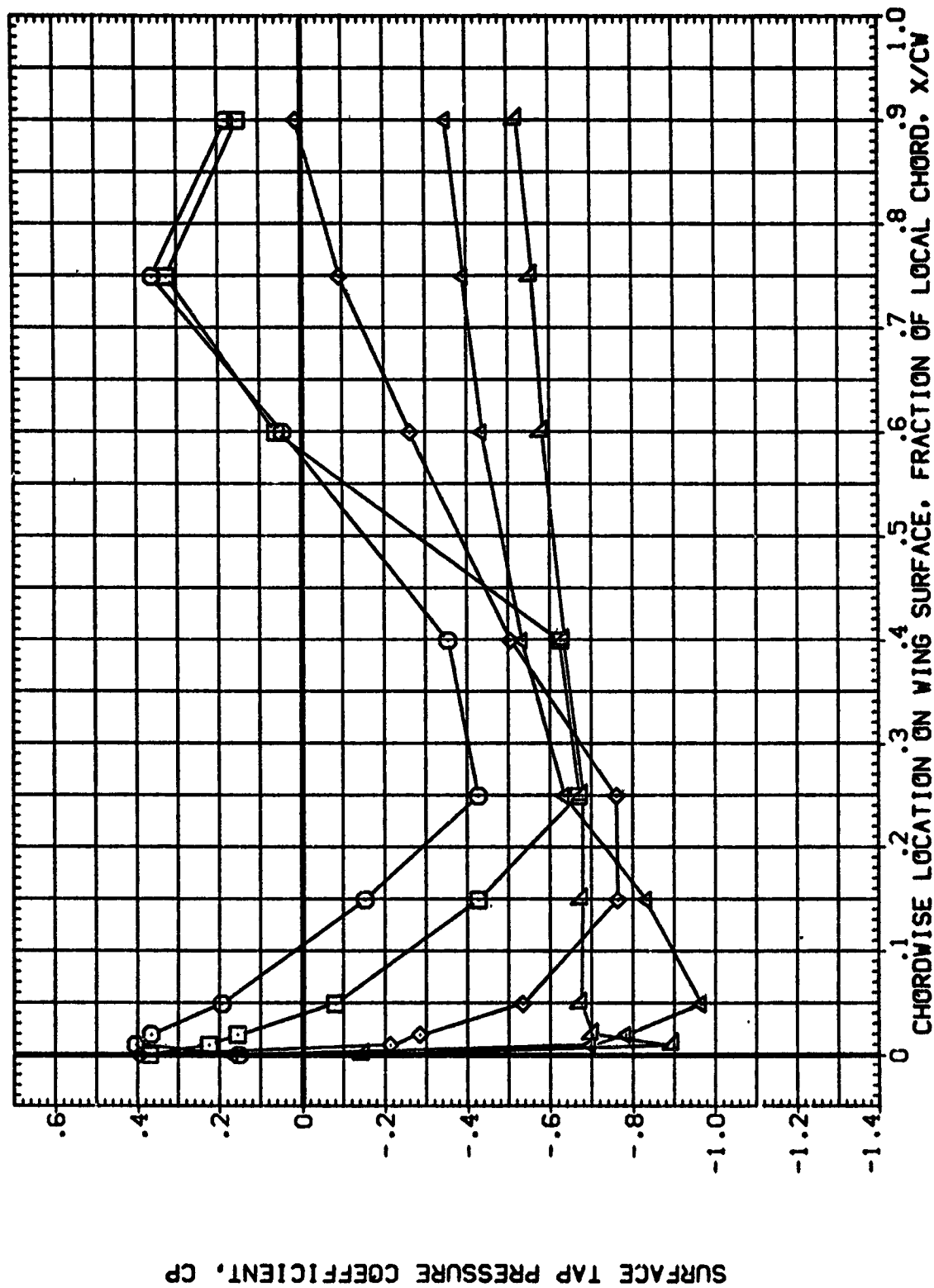


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

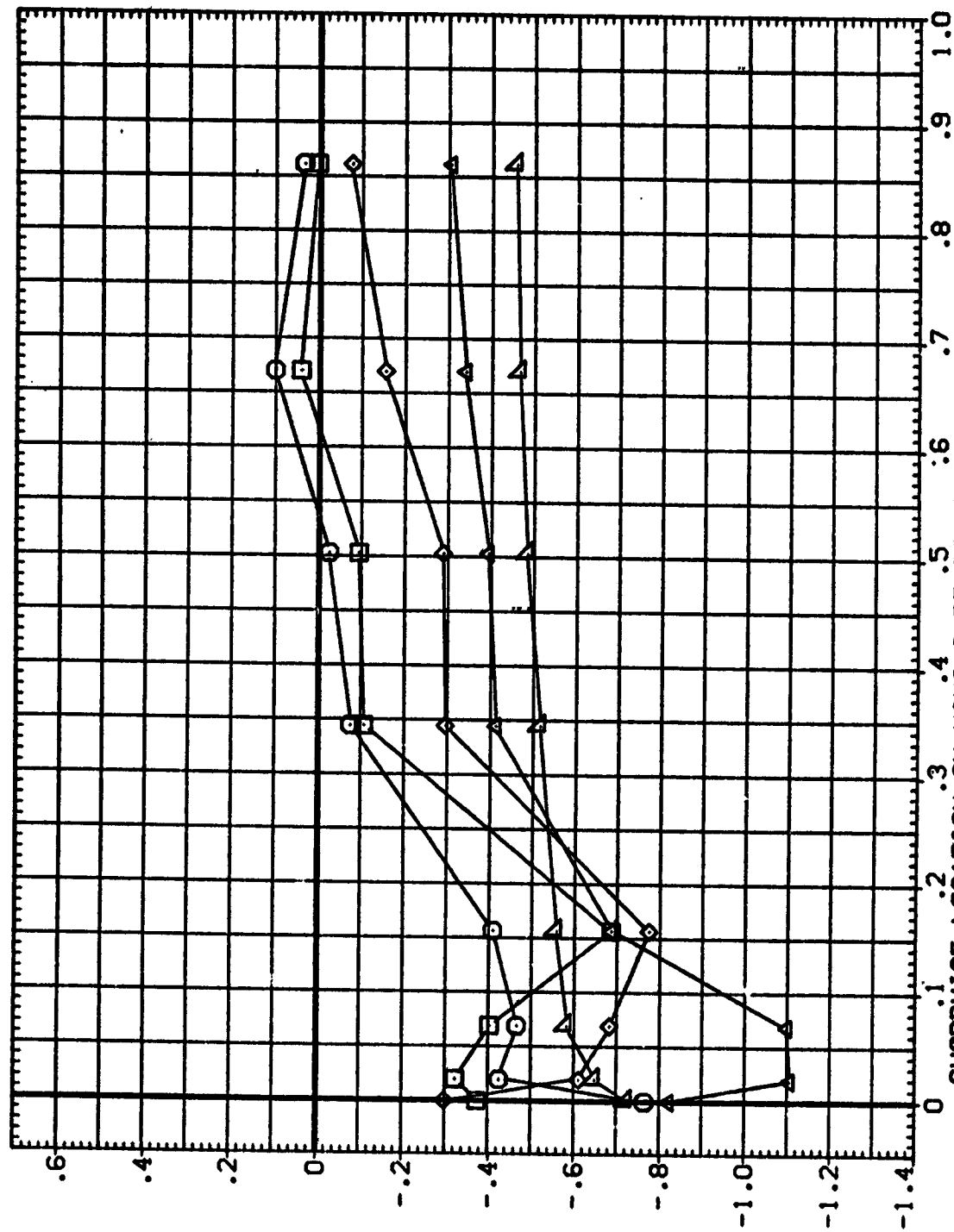
SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .972

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPDRK
 L-ELVN
 MACH
 55.000
 -10.000
 .900



SURFACE TAP PRESSURE COEFFICIENT, CP

CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BW
 .299

BETA
 4.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPOBRK
 16.300 L-ELVN
 -10.000 MACH

55.000
 -10.000
 .900

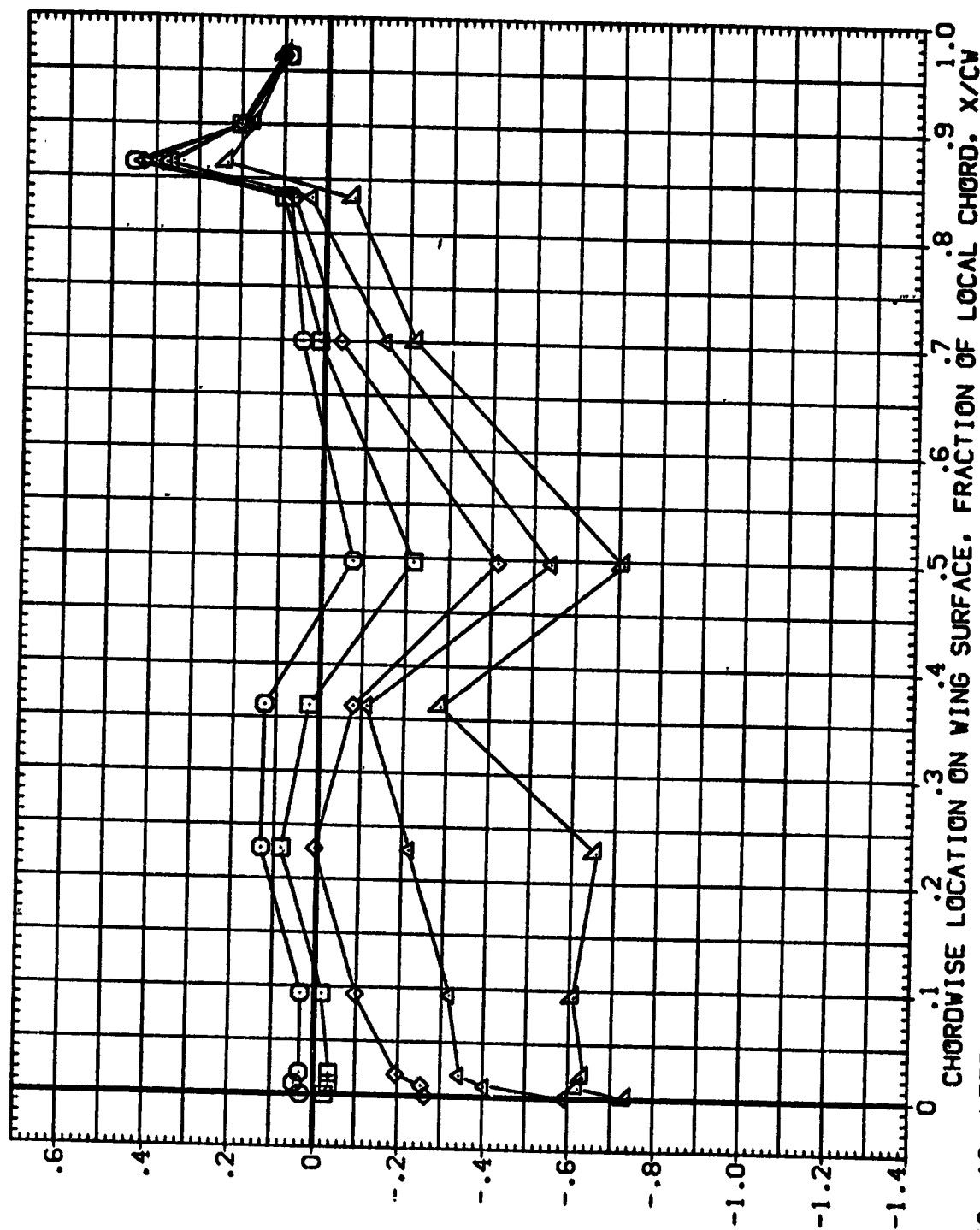


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL

ALPHA
-4.000
.000
4.000
8.000
12.000

ZY/BV BETA
.427 4.000

RUDDER
BDFLAP
R-ELVN

PARAMETRIC VALUES
-5.000 SP08RK
16.300 L-ELVN
-10.000 MACH

55.000
-10.000
.900

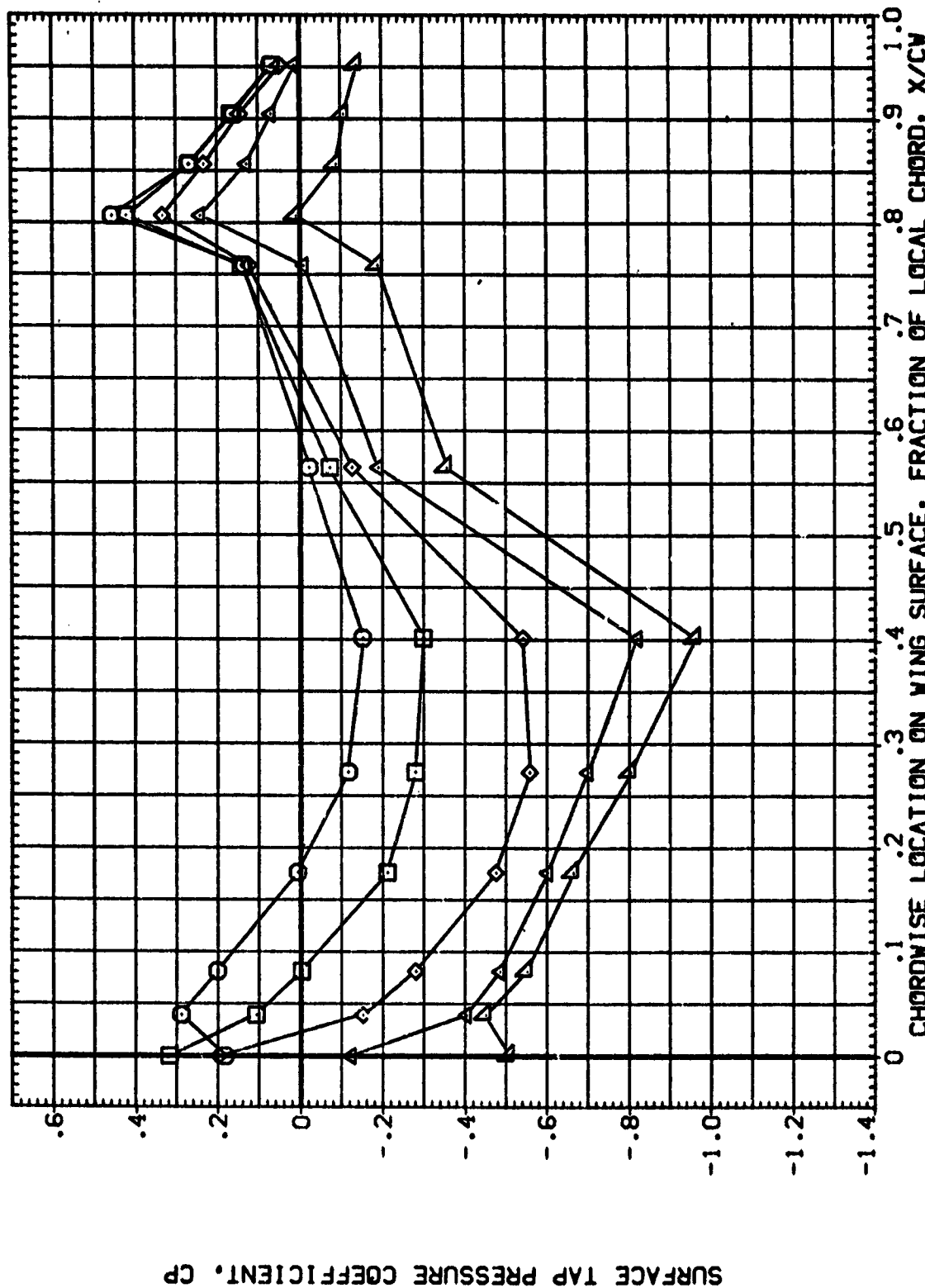


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

SYMBOL
 ▽
 ◇
 ◊
 □
 ○

ALPHA 27/8V BETA
 -4.000 .673 4.000
 .000
 4.000
 8.000
 12.000

PARAMETRIC VALUES
 RUDDER -5.000 SPOBRK 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH .500

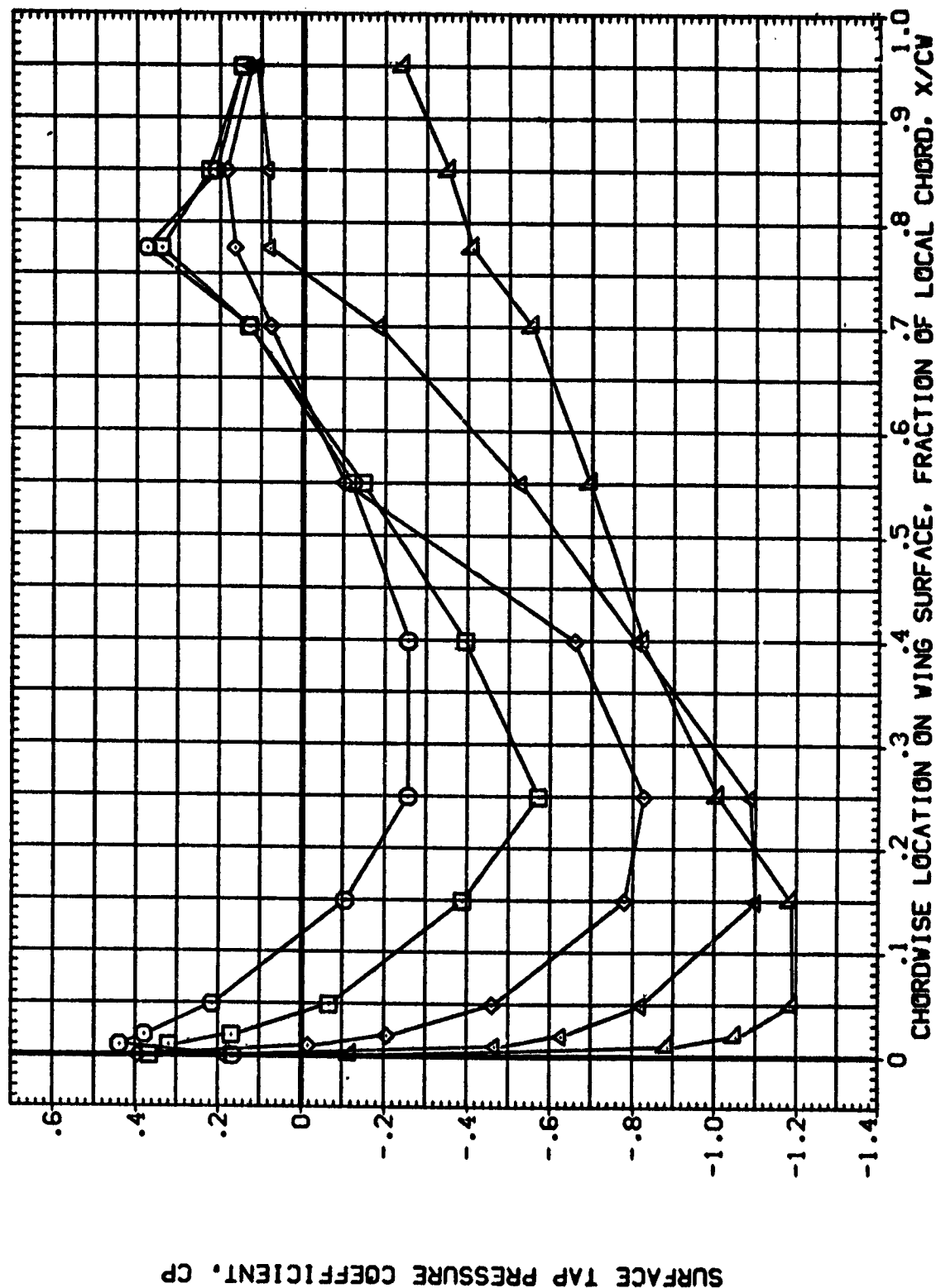


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .887
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 80FLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 VACH .500

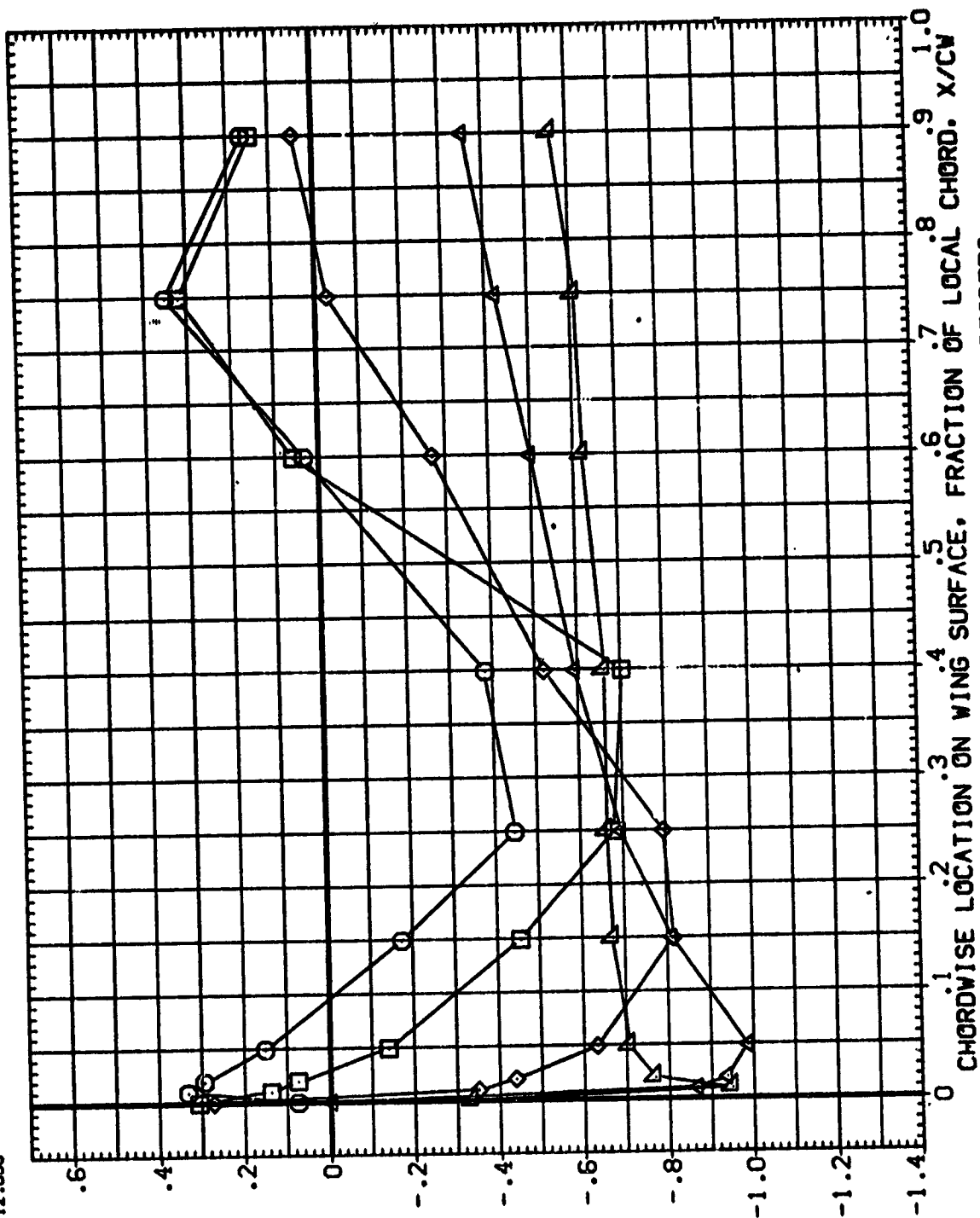


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U74)

SYMBOL	ALPHA	2Y/BN	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.572	4.000	BOFLAP	-5.000 SPOBRK
◇	.000			R-ELVN	16.300 L-ELVN
□	4.000				-10.000 MACH
	8.000				
	12.000				

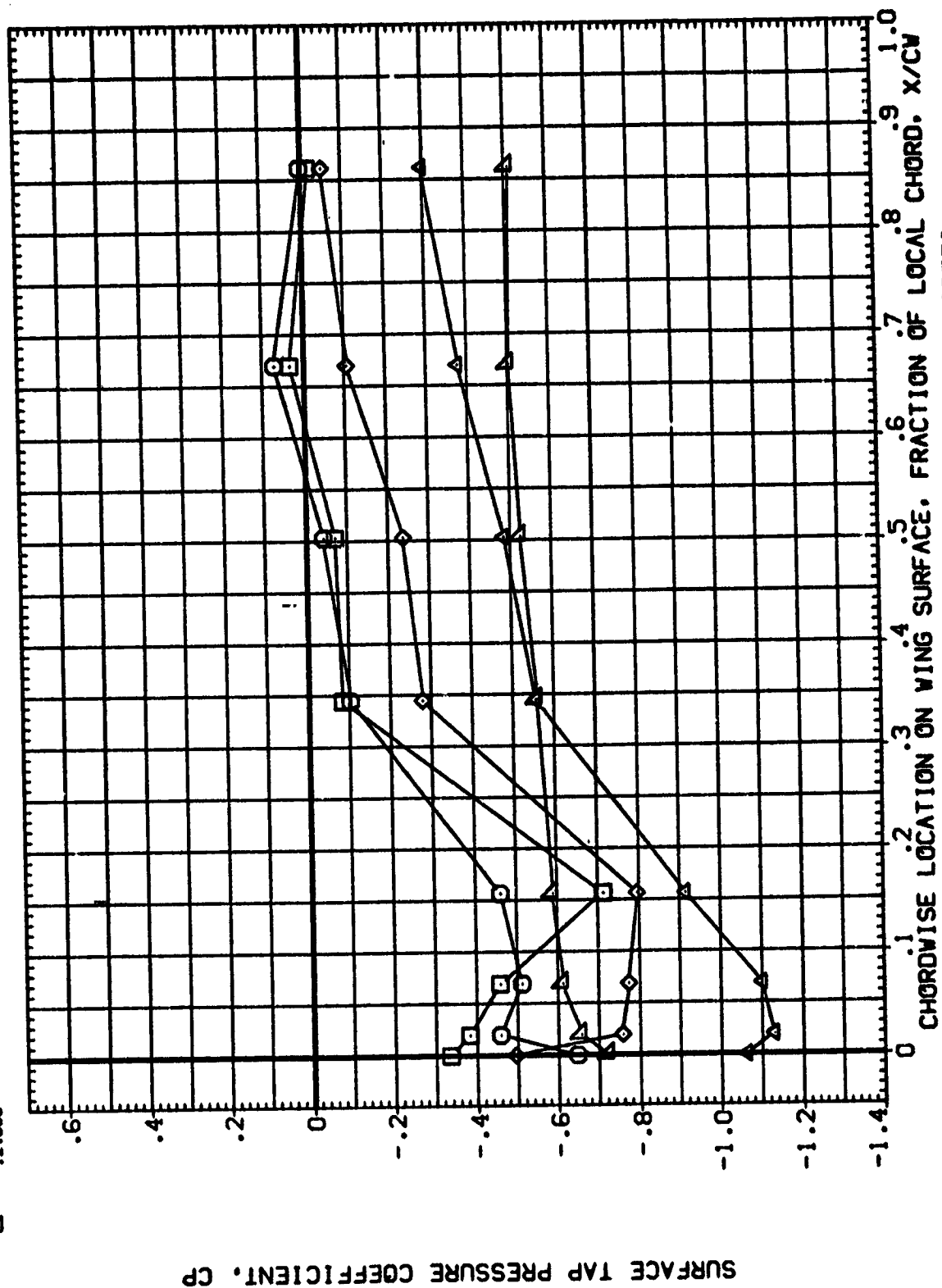


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

PARAMETRIC VALUES
 RUDDER -5.000 SPOILER -5.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.100

ALPHA 21/BN BETA
 -1.000 .299 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ○ □ ◇ △ ▽

SURFACE TAP PRESSURE COEFFICIENT, CP

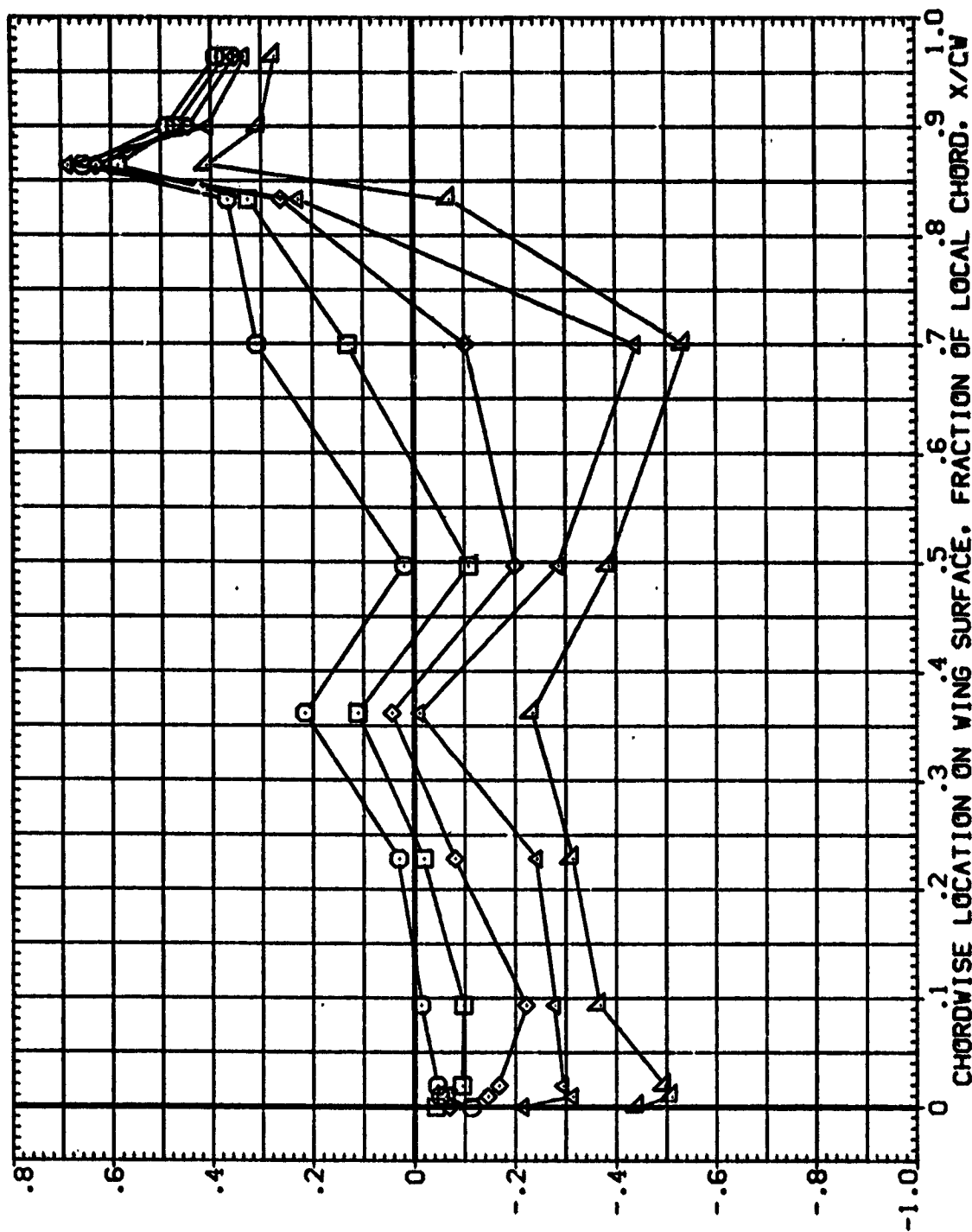


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U73)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V BETA
 .427 -4.000

PARAMETRIC VALUES

RUDER
 80FLAP
 R-ELVN

SPDRBK
 L-ELVN
 MACH

55.000
 -10.000
 1.100

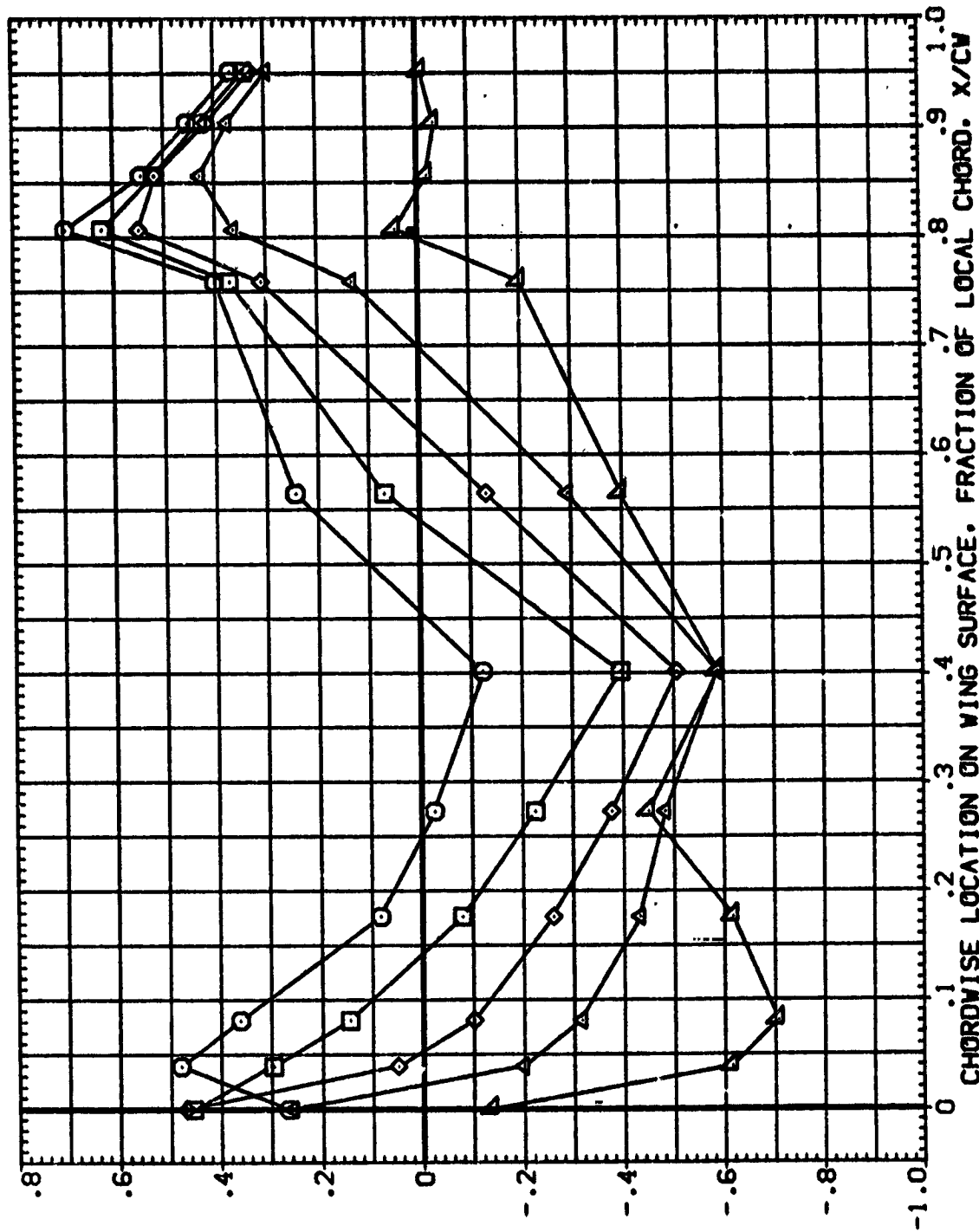


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U73)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

2Y/8V
.673

BETA
-4.000

PARAMETRIC VALUES
RUDDER
80FLAP
R-ELVN

-5.000
16.300
-10.000

SP088K
L-ELVN
MACH

55.000
-10.000
1.100

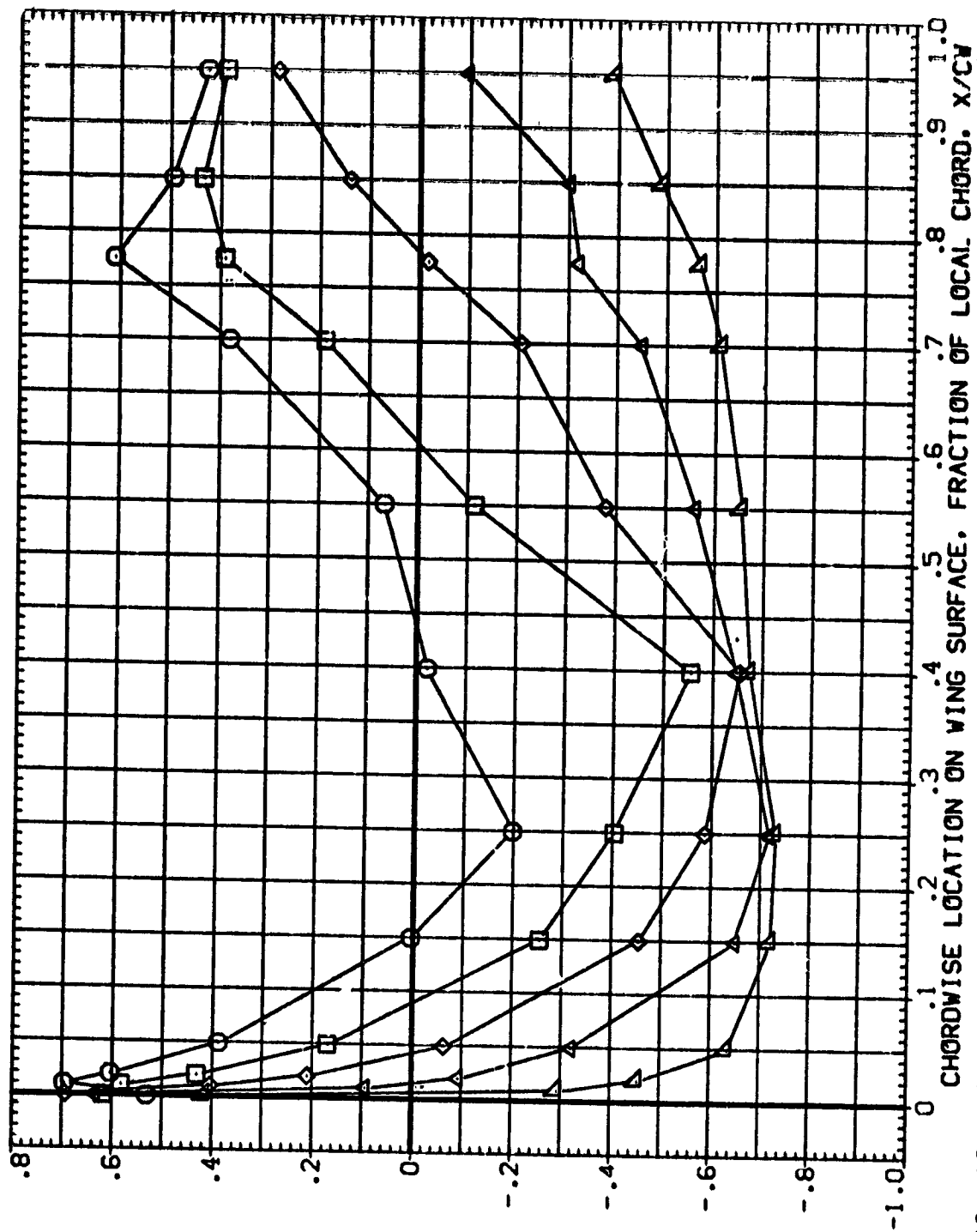


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(OA148) -140A/B/C ORB LEFT WING TOP(IE8U73)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.867	-4.000	BDFLAP	-5.000
◇	.000			R-ELVN	16.300
□	4.000				-10.000
△	8.000				1.100
○	12.000				

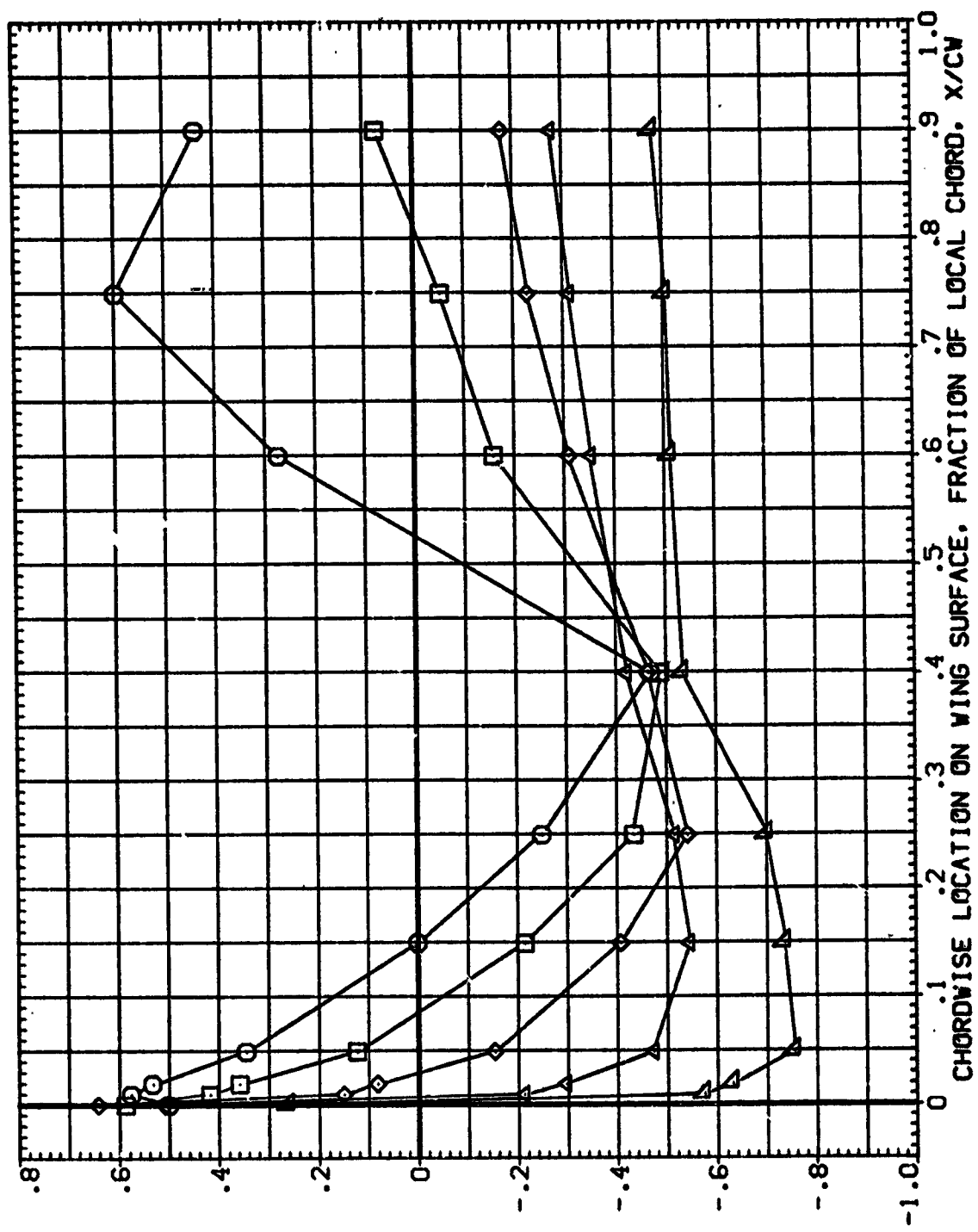
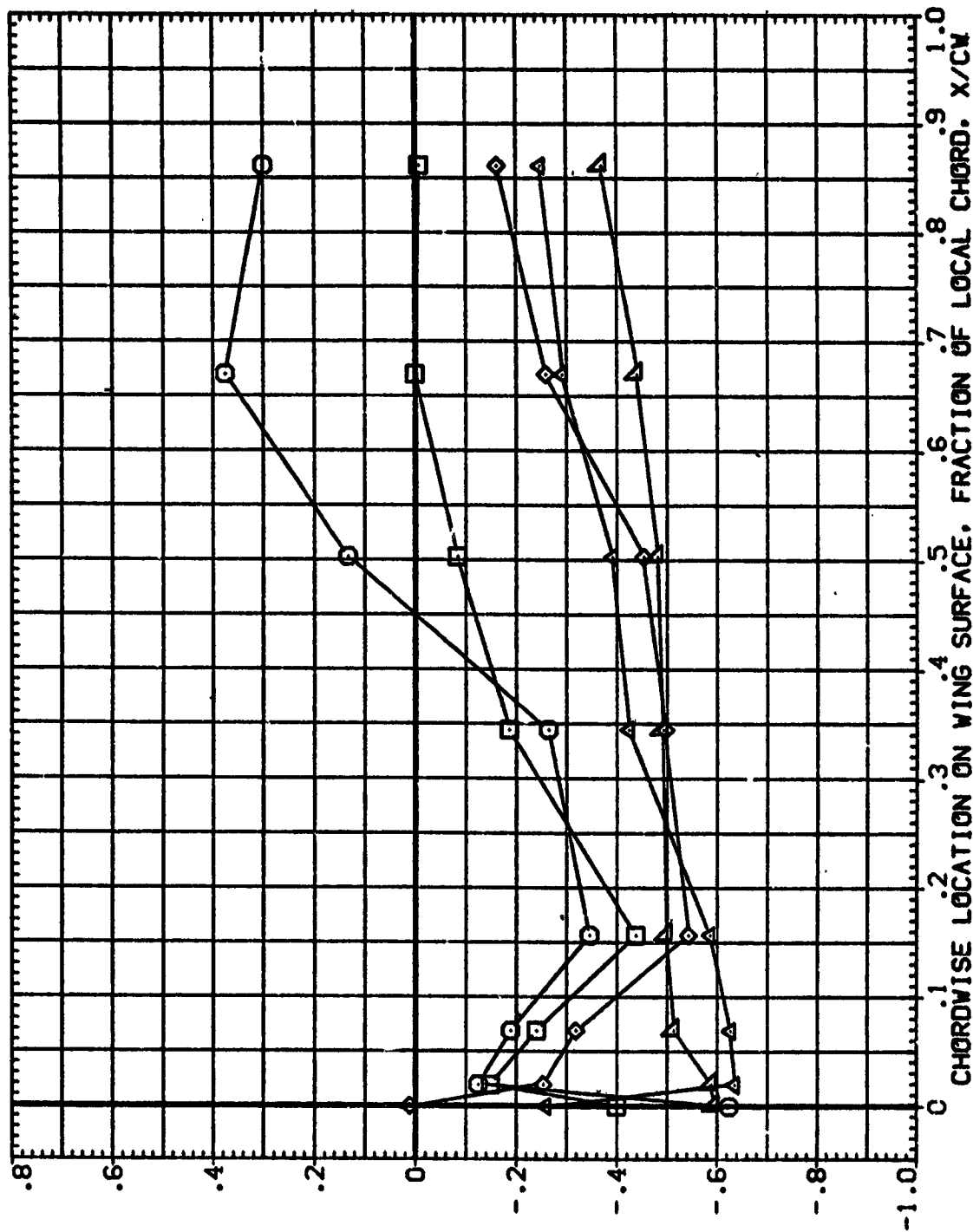


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL	ALPHA	2Y/BV	BETA	RUDER	PARAMETRIC VALUES
○	-4.000	.972	-4.000	BOFLAP	-5.000
□	.000			R-ELVN	16.300
◇	4.000				L-ELVN
△	8.000				MACH
▽	12.000				



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U73)

SYMBOL	ALPHA	2Y/BV	BETA	PARAMETRIC VALUES
○	-4.000	.299	.000	-5.000
□	.000			SPDRK
◇	4.000			16.300
△	8.000			L-ELVN
▽	12.000			-10.000
				MACH
				1.100
				R-ELVN
				-10.000
				BDFLAP
				-5.000
				RUDDER
				-10.000

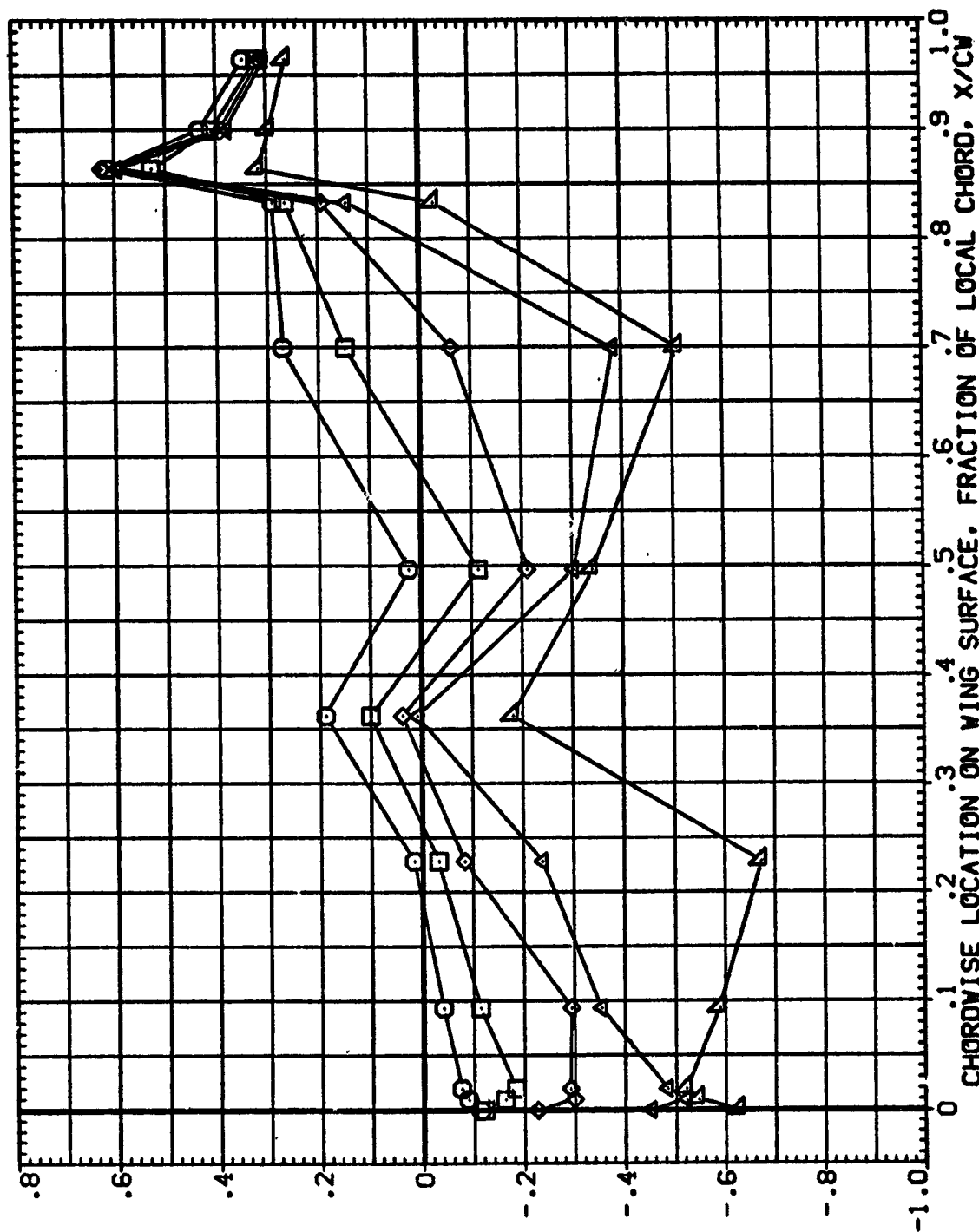


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN .427

BETA .000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPOBRK 55.000
 16.300 L-ELVN -10.000
 -10.000 MACH 1.100

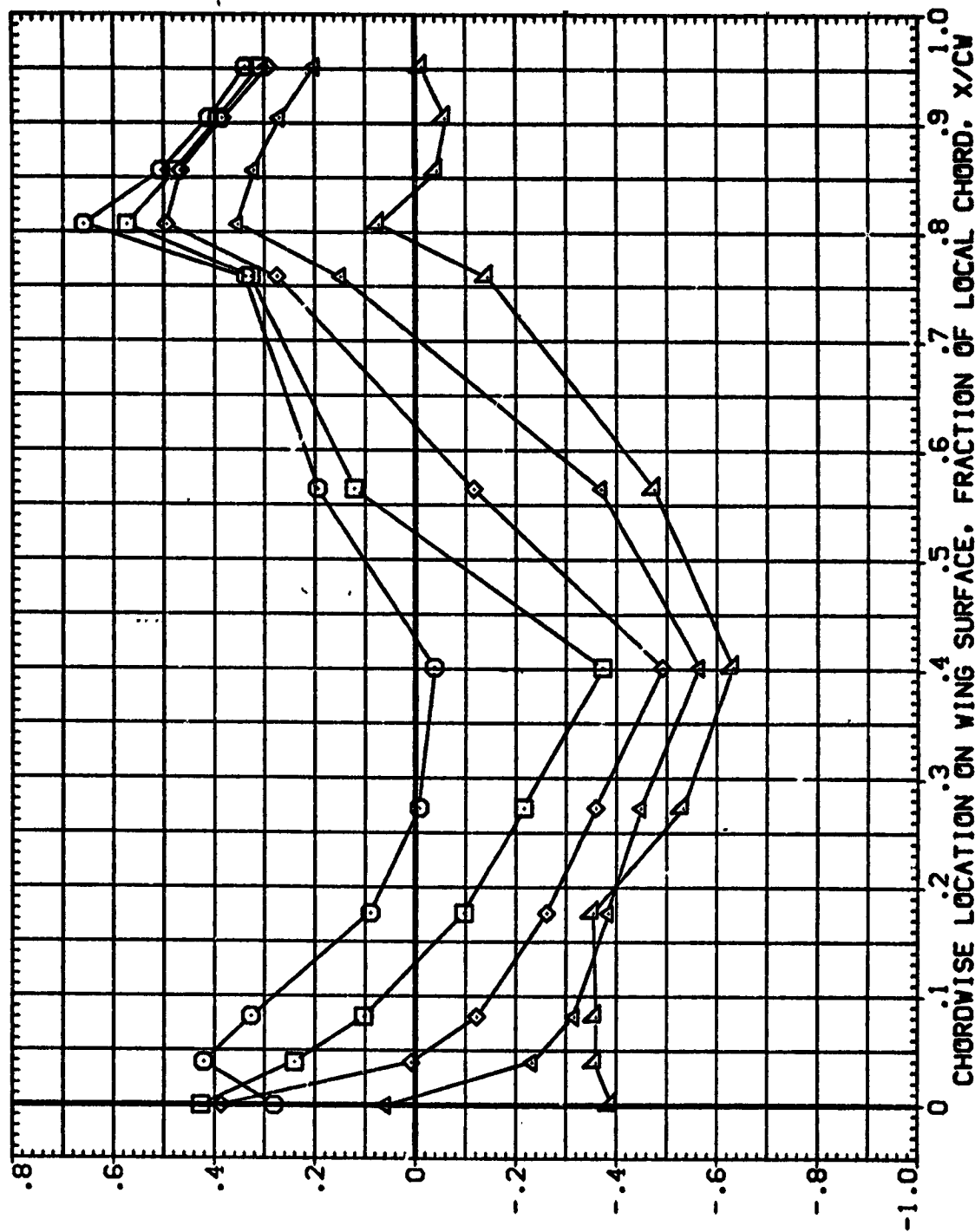


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(OA148) -140A/B/C ORB LEFT WING TOP(IEBU73)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES			
				RUDDER	BOFLAP	SPDRBK	SS.000
○	-4.000	.673	.000	BOFLAP	16.300	L-ELVN	-10.000
□	.000			R-ELVN	-10.000	MACH	1.100
◇	4.000						
△	8.000						
▽	12.000						

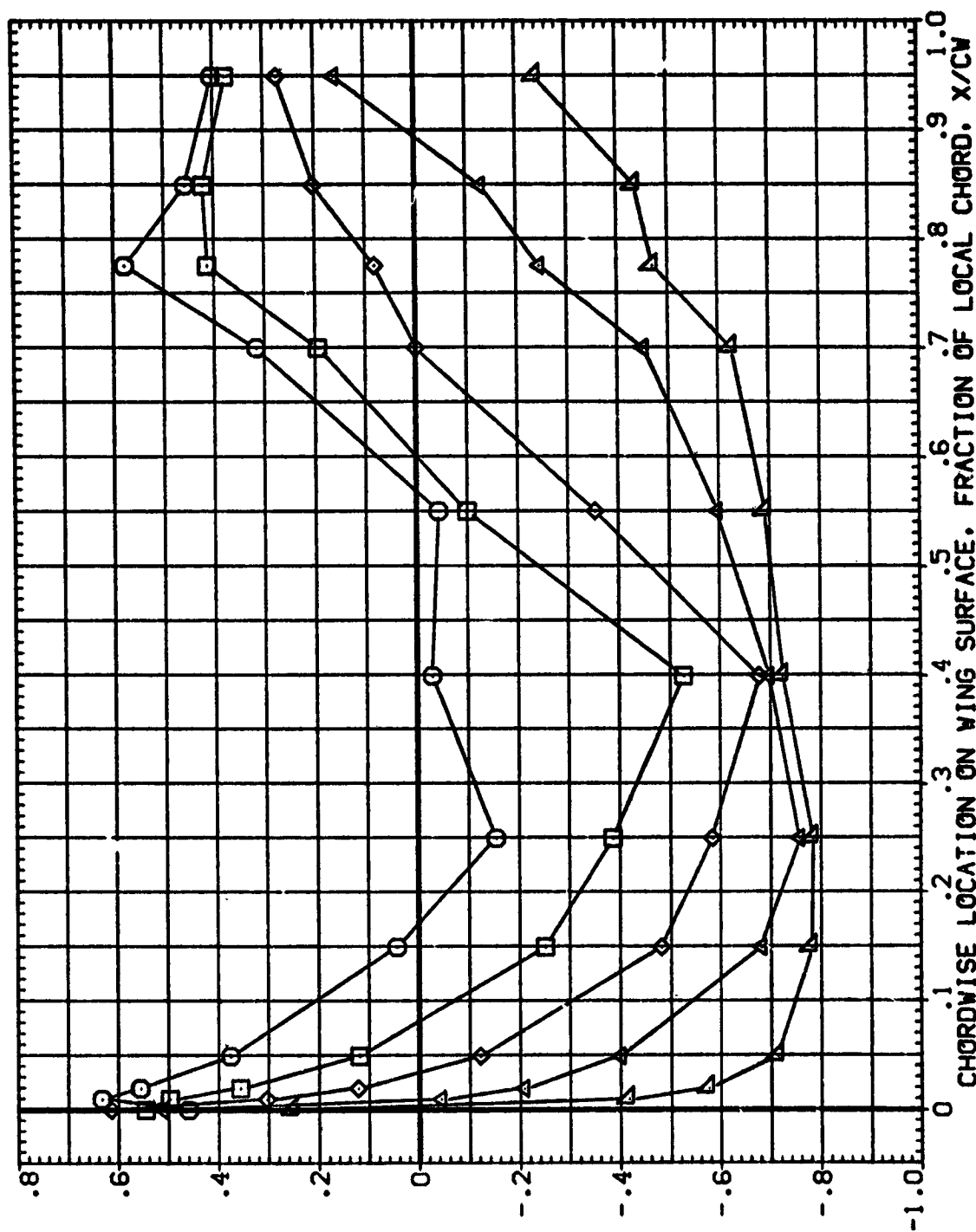


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U73)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/8V .887
 BETA .000

PARAMETRIC VALUES
 RUDDER -5.000
 BDFLAP 16.300
 R-ELVN -10.000
 SP08RK 55.300
 L-ELVN -10.000
 MACH 1.100

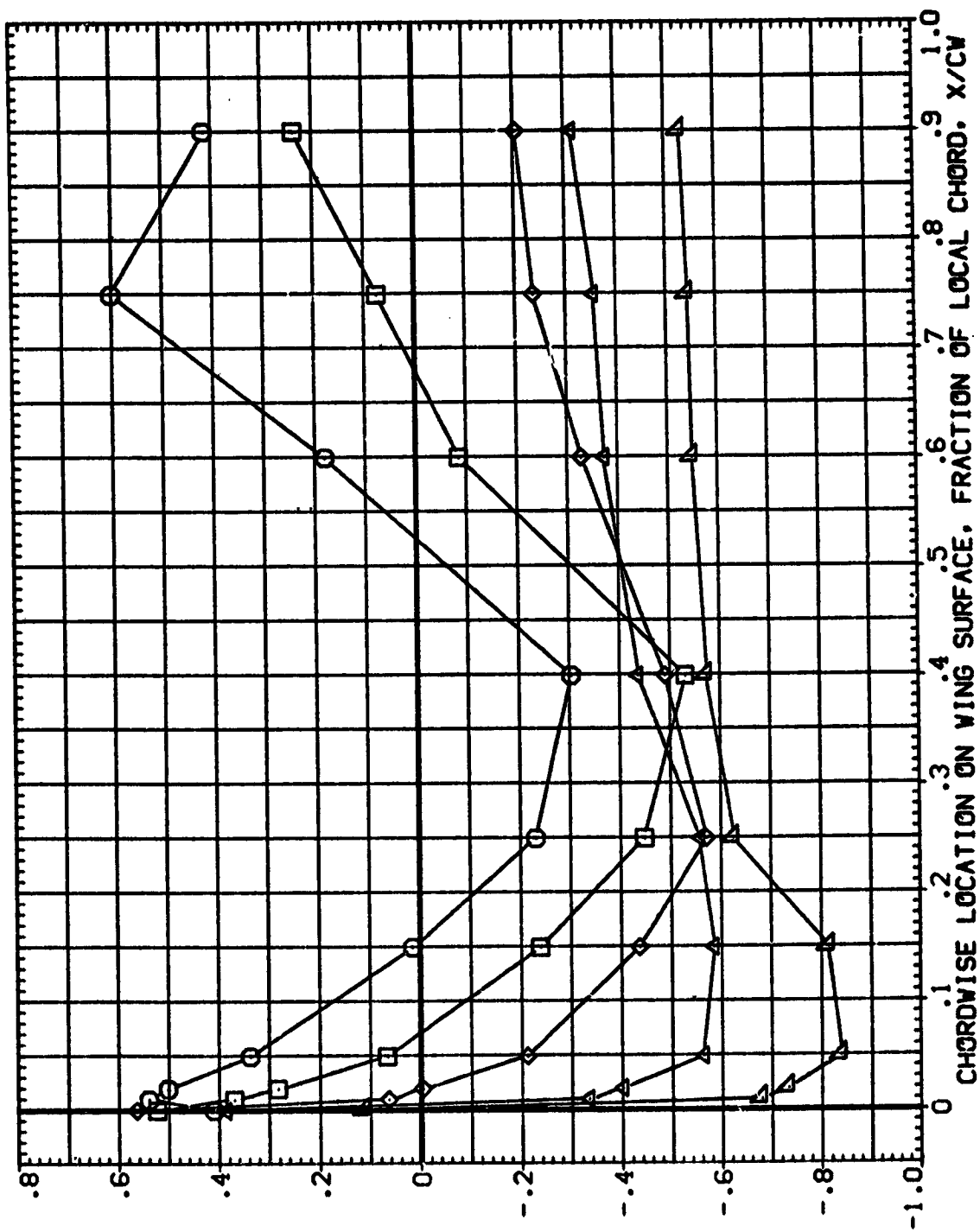


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U73)

SYMBOL

ALPHA
-4.000
4.000
8.000
12.000

ZY/BV

BETA
.972
.000

PARAMETRIC VALUES

RUDDER
80FLAP
R-ELVN

-5.000
16.300
-10.000

SPOBRK
L-ELVN
MACH

55.000
-10.000
1.100

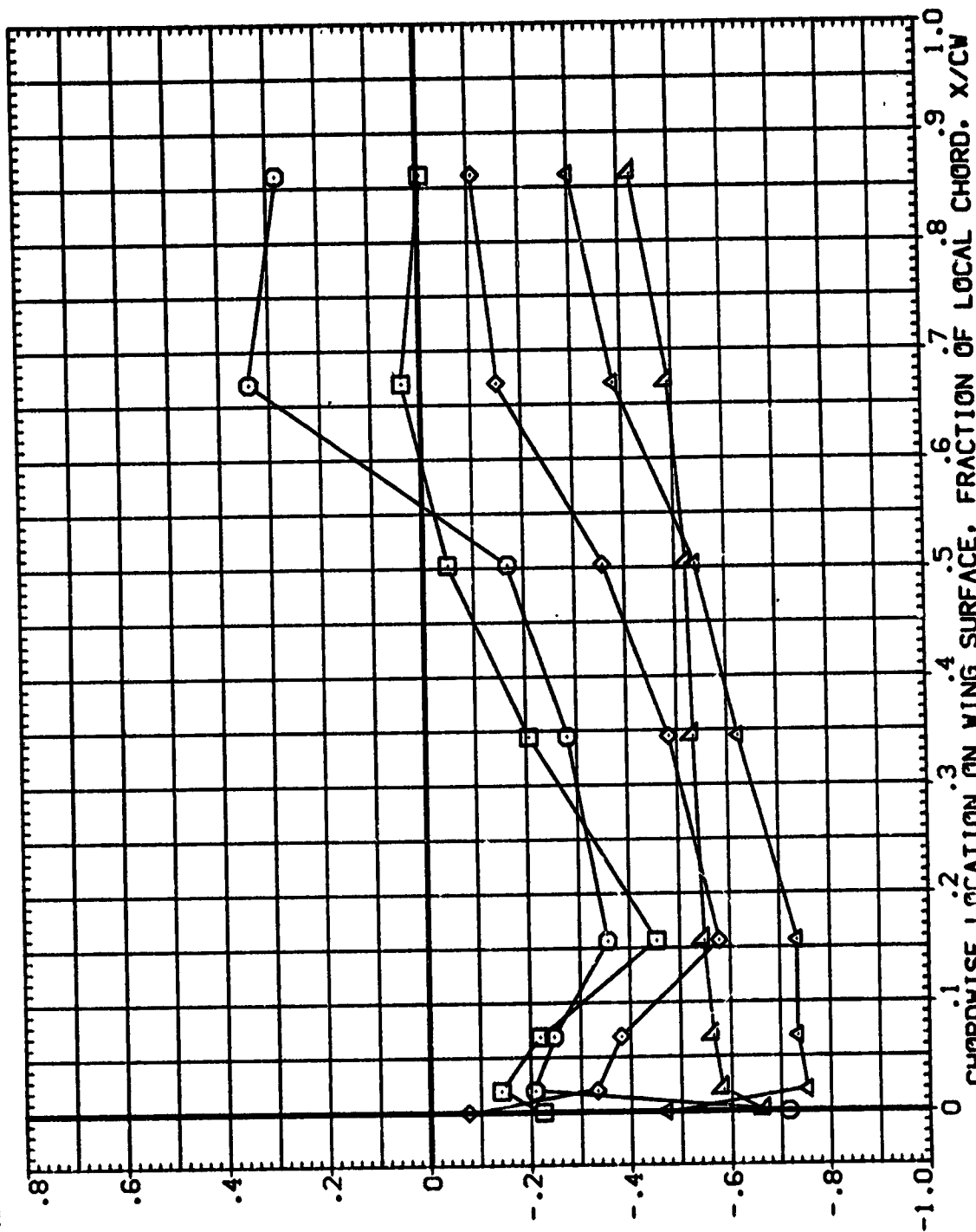


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U73)

SYMBOL
 ∇ \diamond \square \triangle

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .299

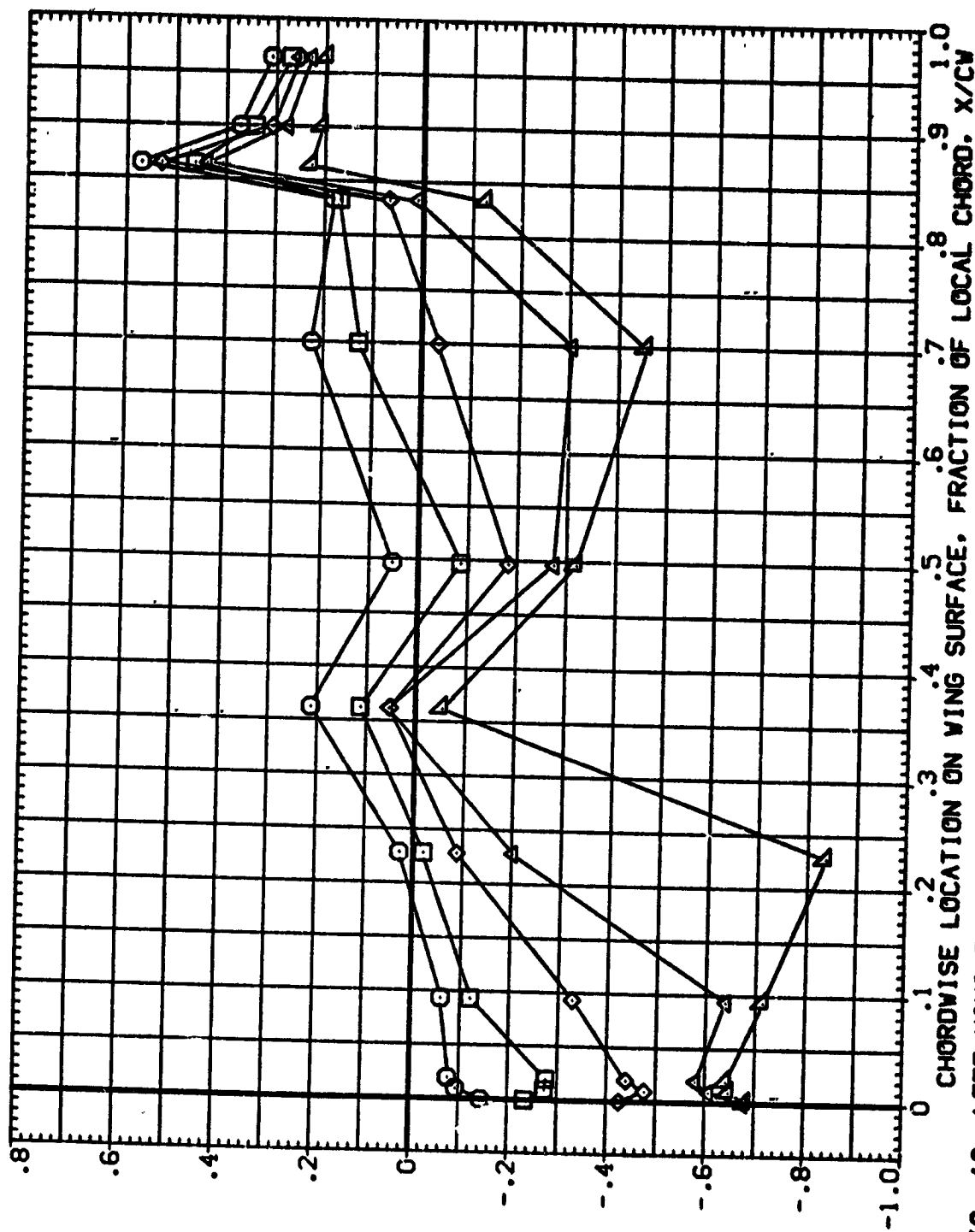
BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDBCR
 L-ELVN
 MACH

55.000
 -10.000
 1.100



SURFACE TAP PRESSURE COEFFICIENT, C_p

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U73)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 -0.000
 4.000
 8.000
 12.000

2Y/BN .427
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK -5.000
 BOFLAP 18.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.100

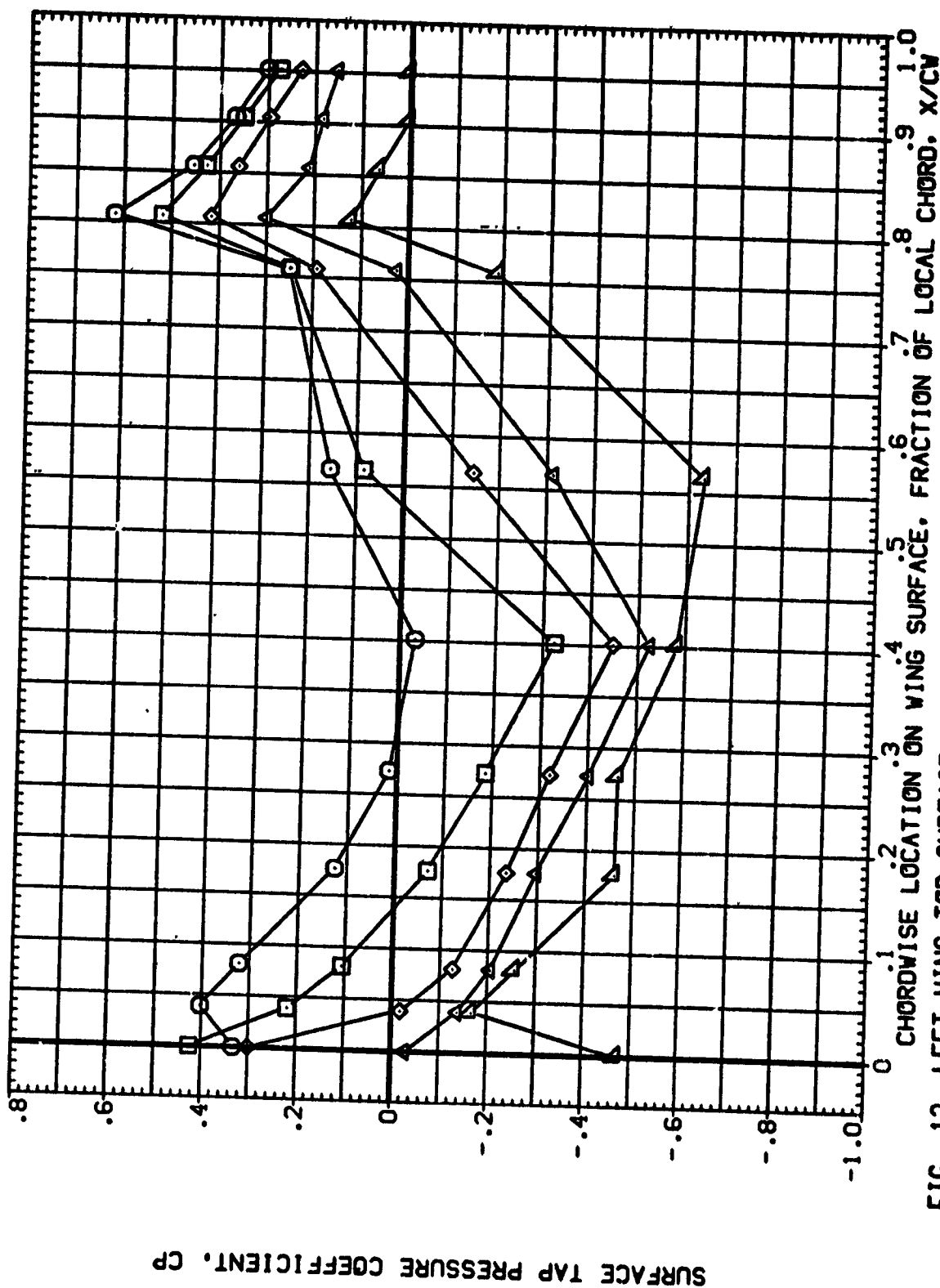


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U73)

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .573

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

SP08RX
 16.300
 -10.000

L-ELVN
 55.000
 -10.000

NACH
 1.100

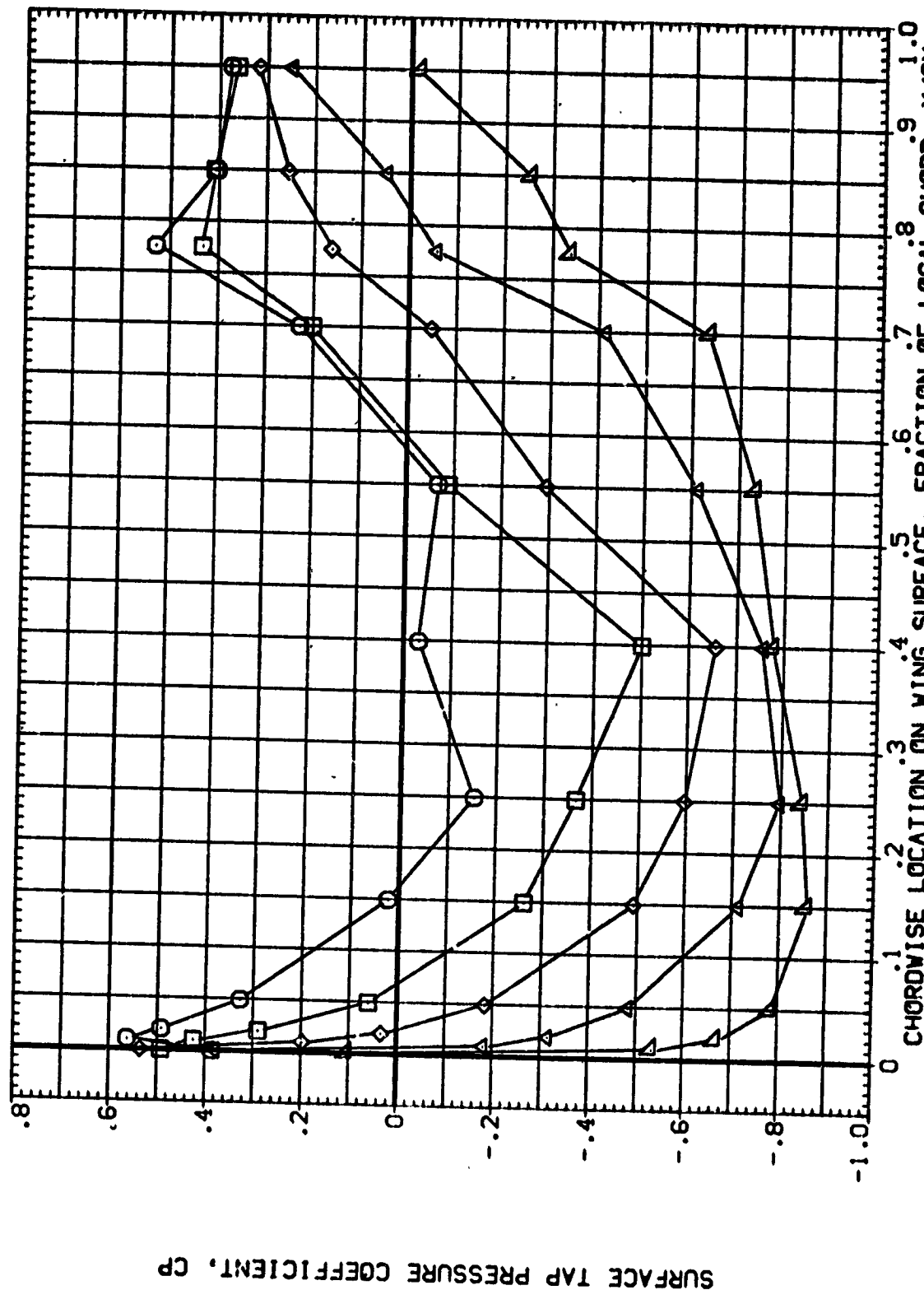


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11 073(0A148) -140A/B/C ORB LEFT WING TGP(1E8U73)

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BV
 .887

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 -5.000
 16.300
 -10.000
 SPDRBK
 L-ELVN
 MACH
 35.000
 -10.000
 1.100

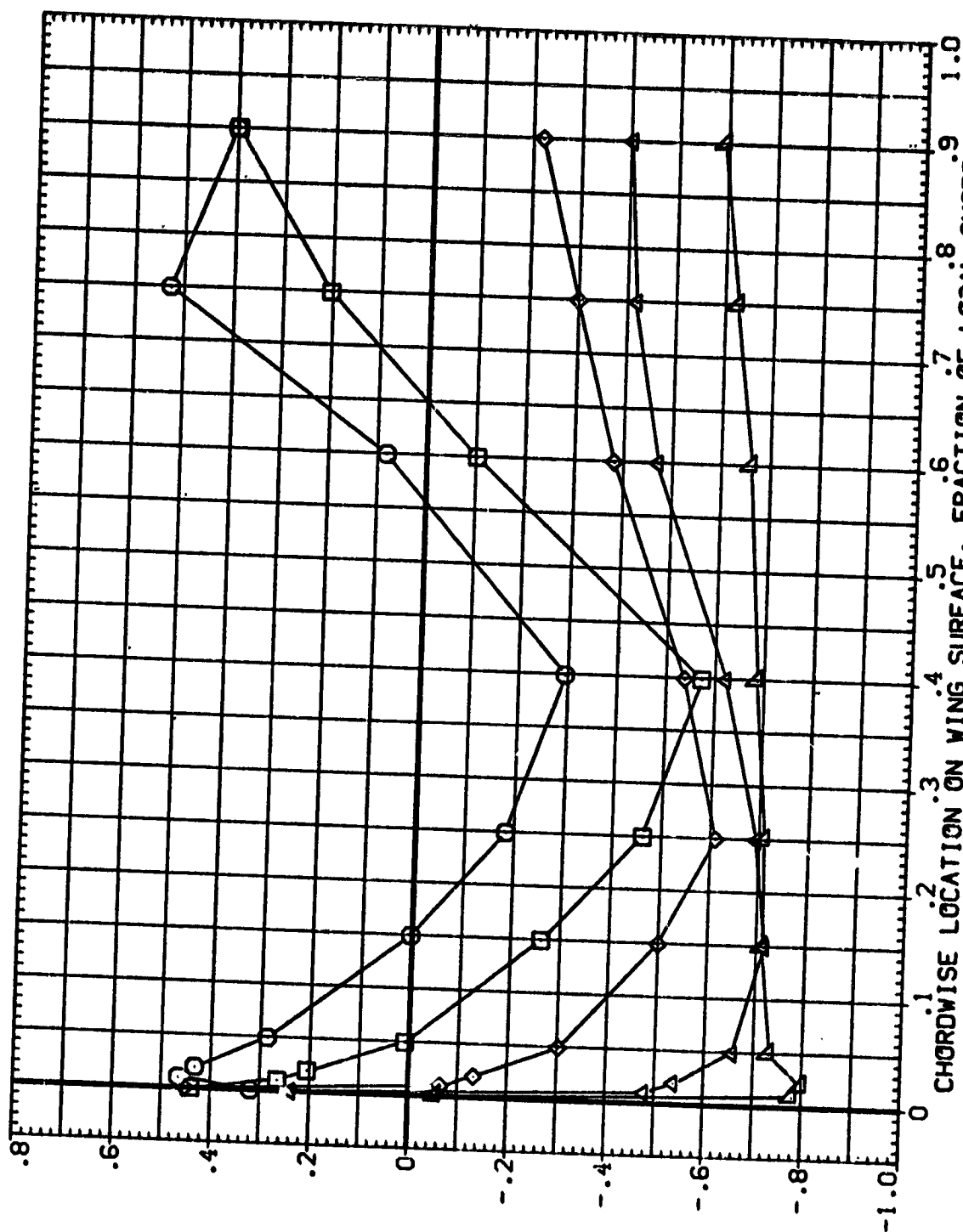


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(CA148) -140A/B/C ORB LEFT WING TOP(IE8U73)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .972

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BDFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 1.100

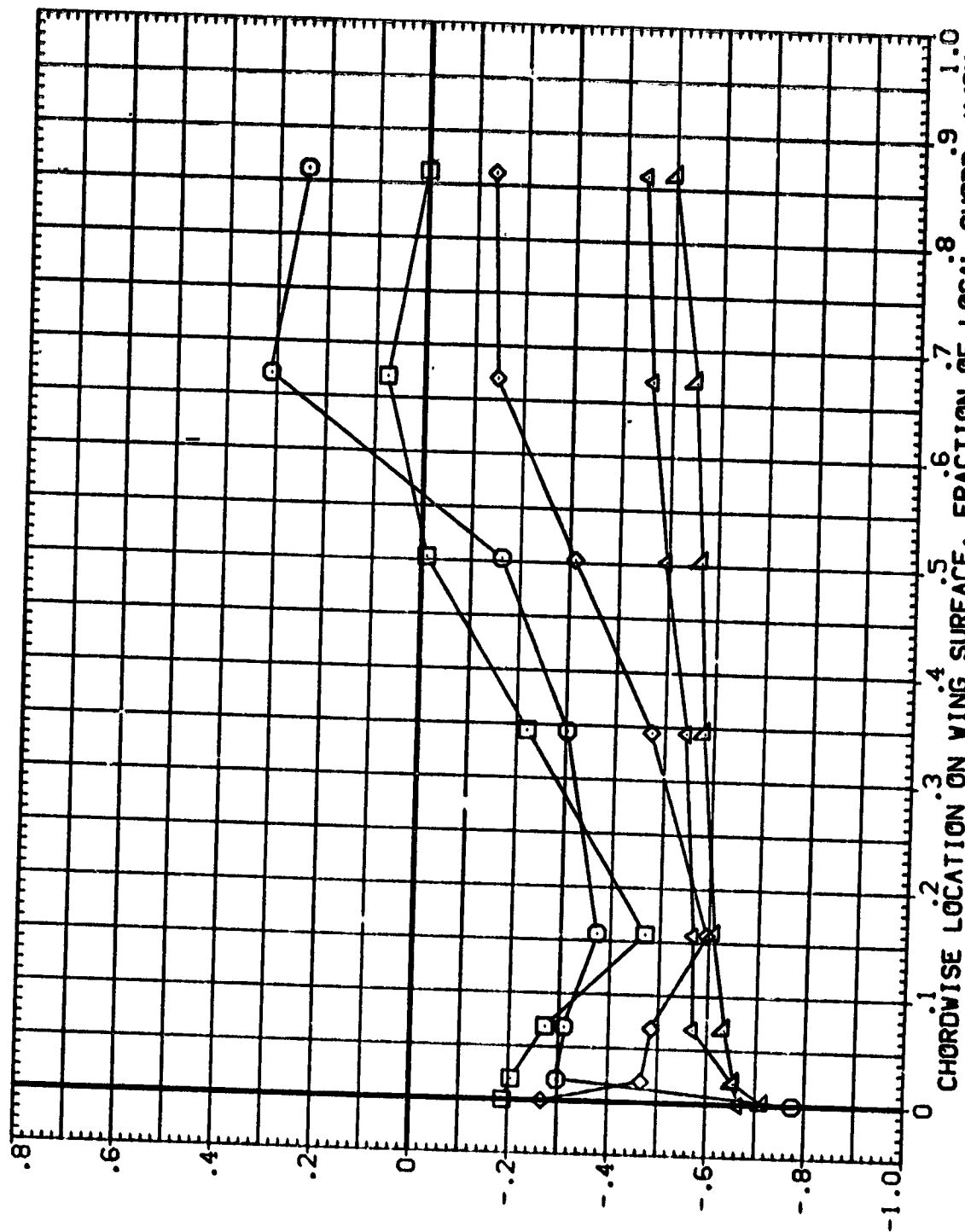


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U72)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .299

BETA -4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN
 -5.000
 16.300
 -10.000

SPDRX
 L-ELVN
 MACH
 55.000
 -10.000
 1.250

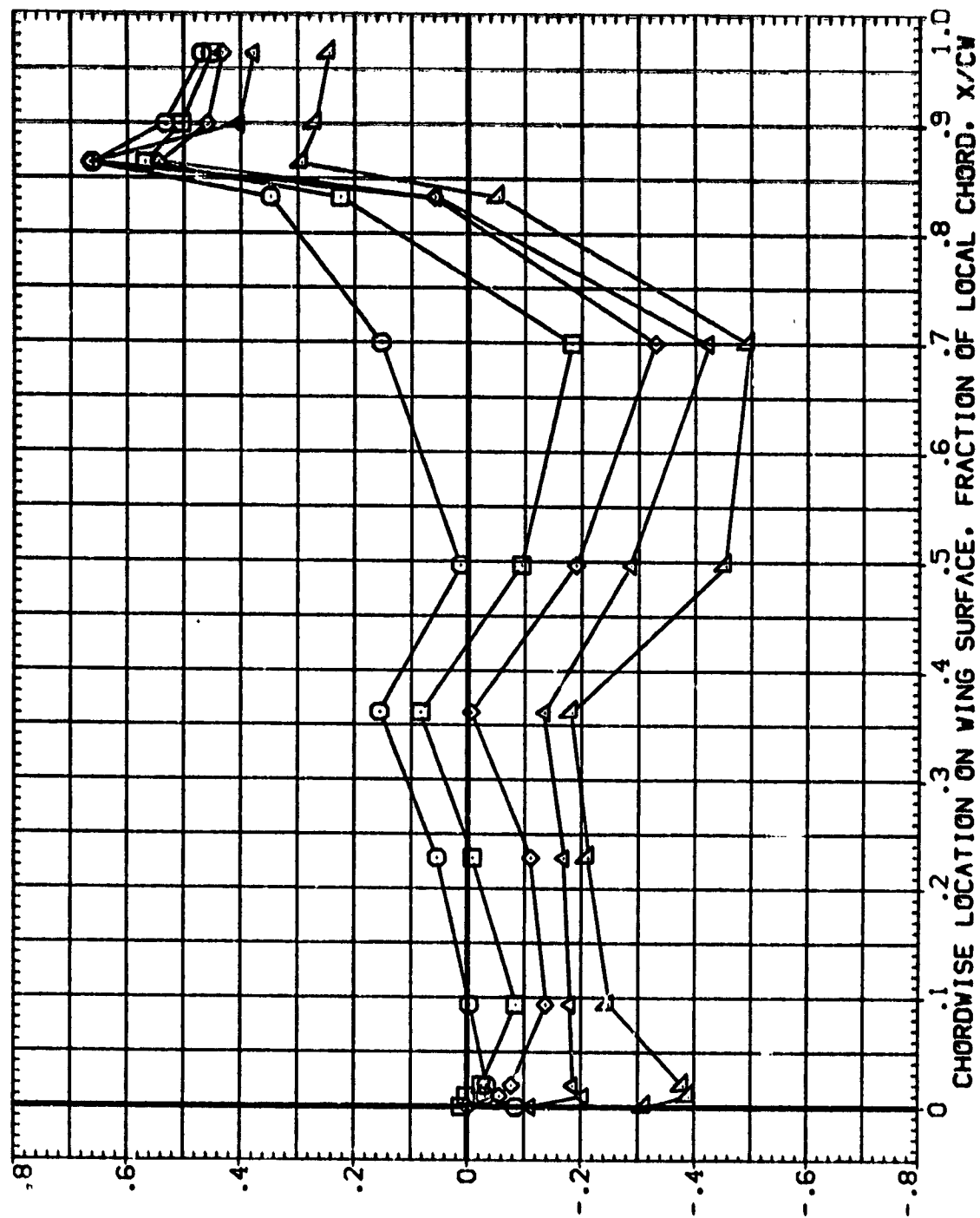


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(GA146) -140A/B/C OR6 LEFT WING TOP(1E8U72)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV
 .427

BETA
 -4.000

PARAMETRIC VALUES

RUDER
 BDFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 1-ELVN
 MACH

55.000
 -10.000
 1.250

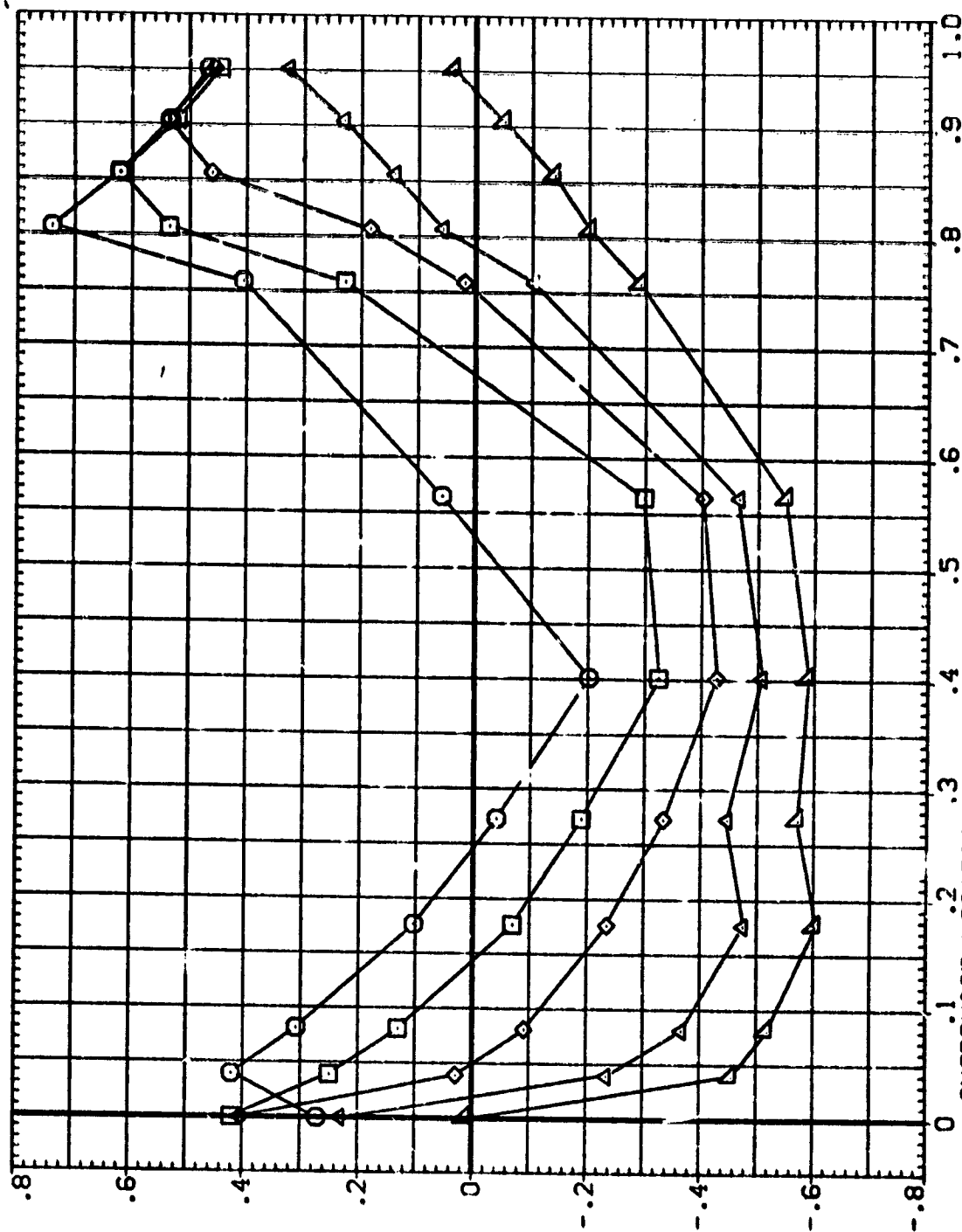


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(GAI48) -140A/B/C CRB LEFT WING TOP(IE8U72)

SYMBOL
 ▽
 ◇
 □
 ○
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .673
 BETA -4.000

PARAMETER VALUES
 MAUTER -5.000 SPDBRK 55.000
 50%LAP 14.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

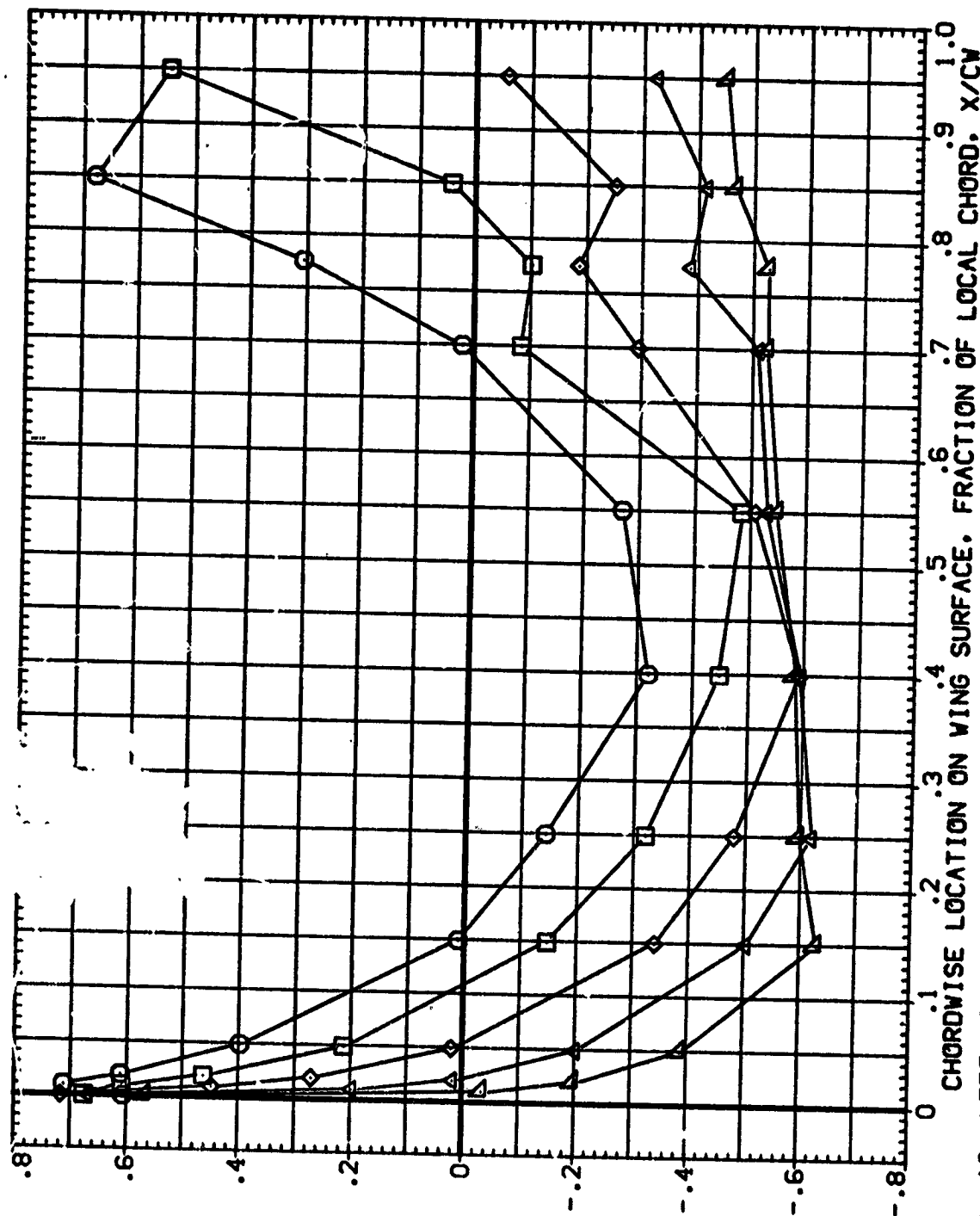


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

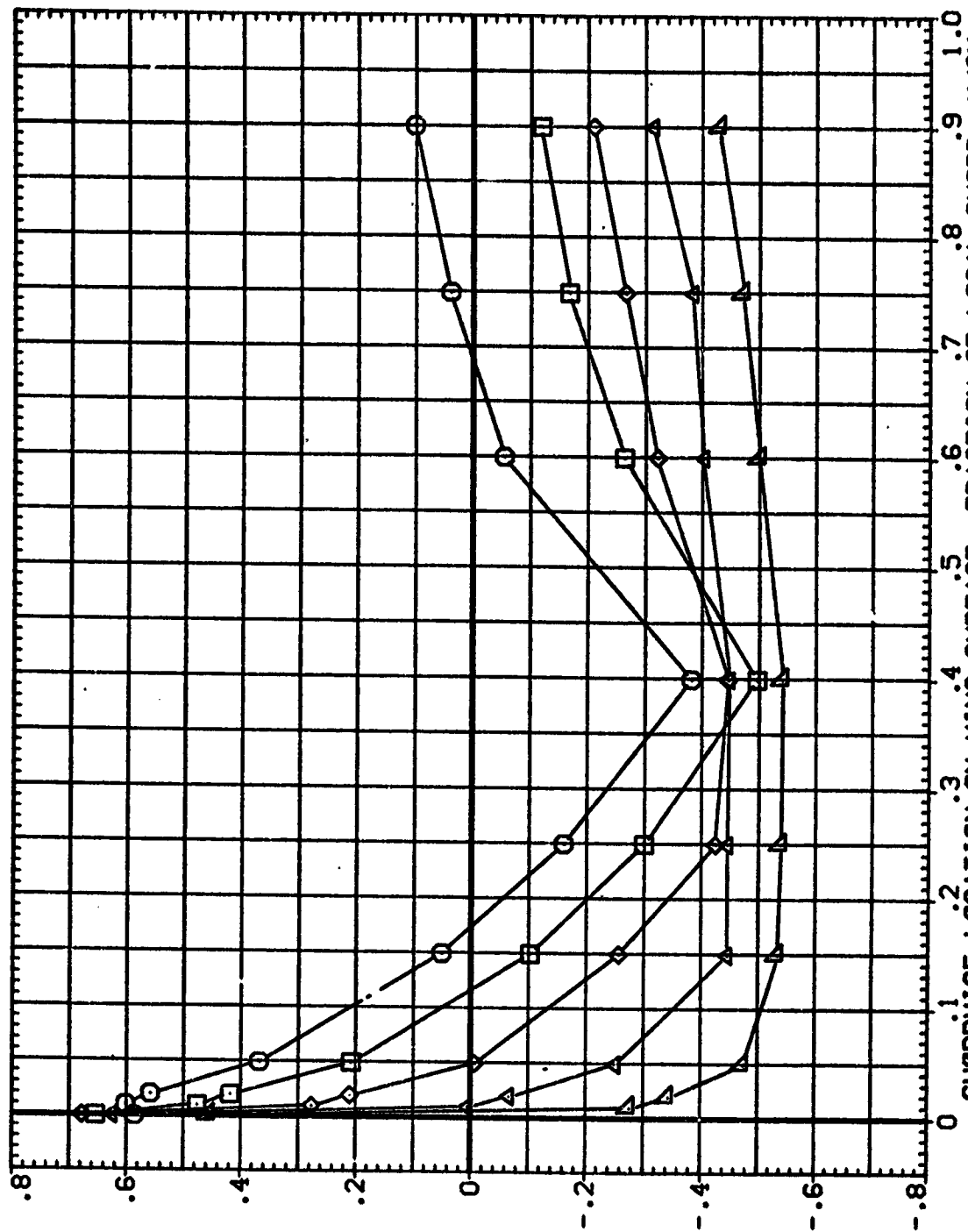
AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U72)

SYMBOL
 ▽ ◆ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/8V BETA
 .887 -4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPOBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250



SURFACE TAP PRESSURE COEFFICIENT, CP

CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U72)

SYMBOL
 ▽ ◆ □ ◇ ▴

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

ZY/BV BETA
 .972 -4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPOBRK 55.000
 SDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

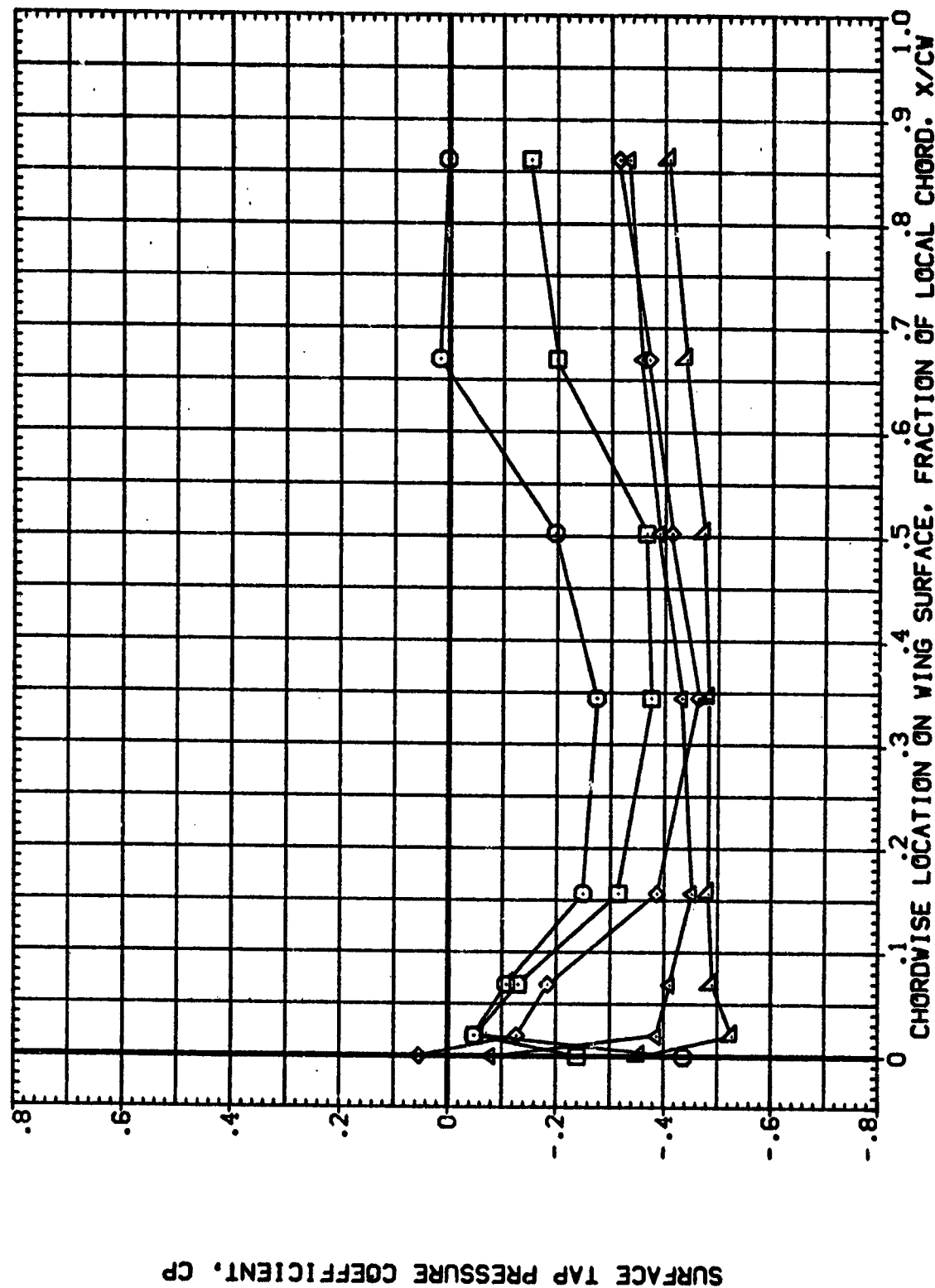


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .299
 BETA .000

PARAMETRIC VALUES
 RUDDER -5.000 SP088K 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

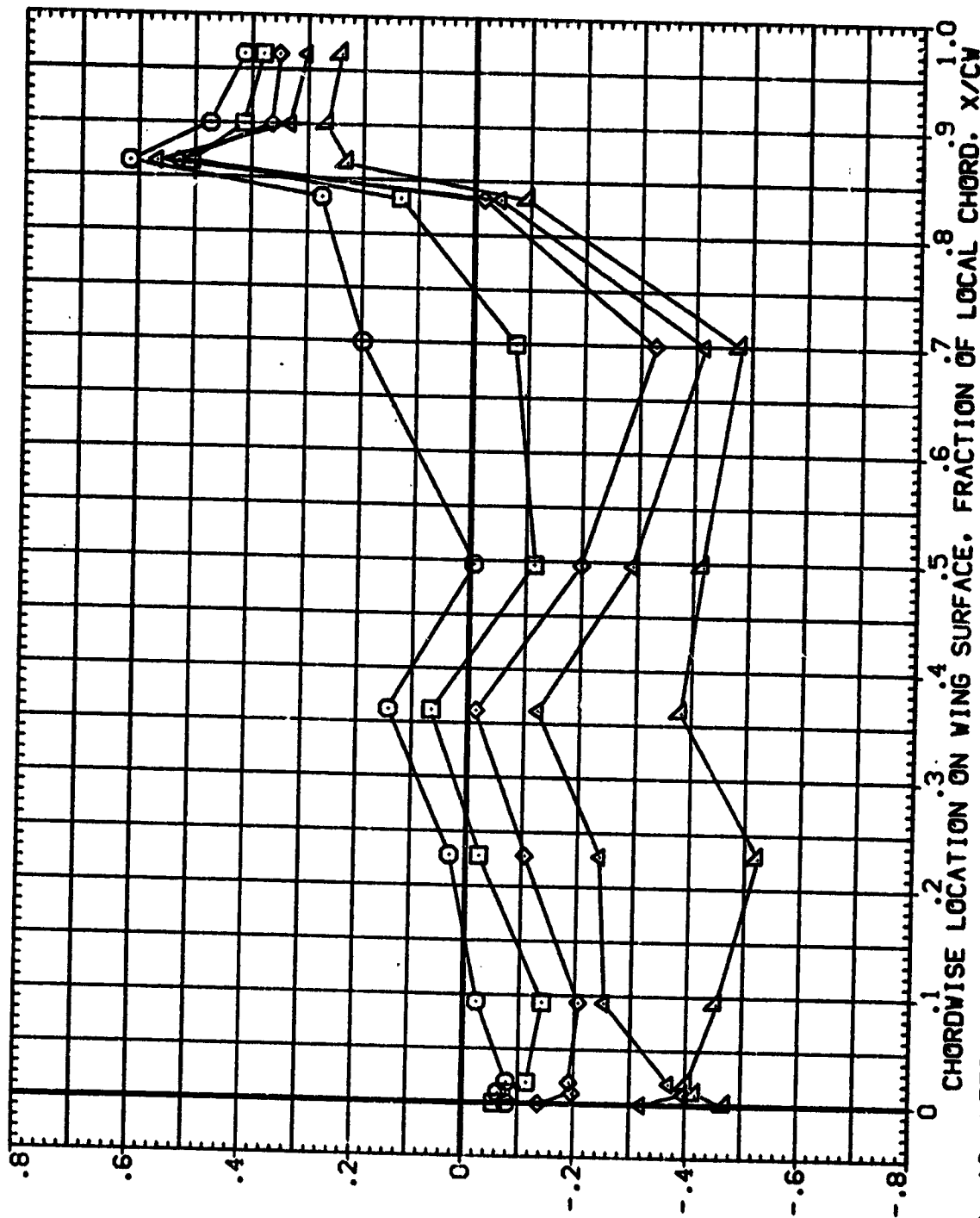


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U72)

ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
-4.000	.427	.000	RUDDER
.000			80FLAP
4.000			R-ELVN
8.000			-10.000
12.000			-10.000
			SPORRK
			L-ELVN
			MACH
			55.000
			-10.000
			1.250

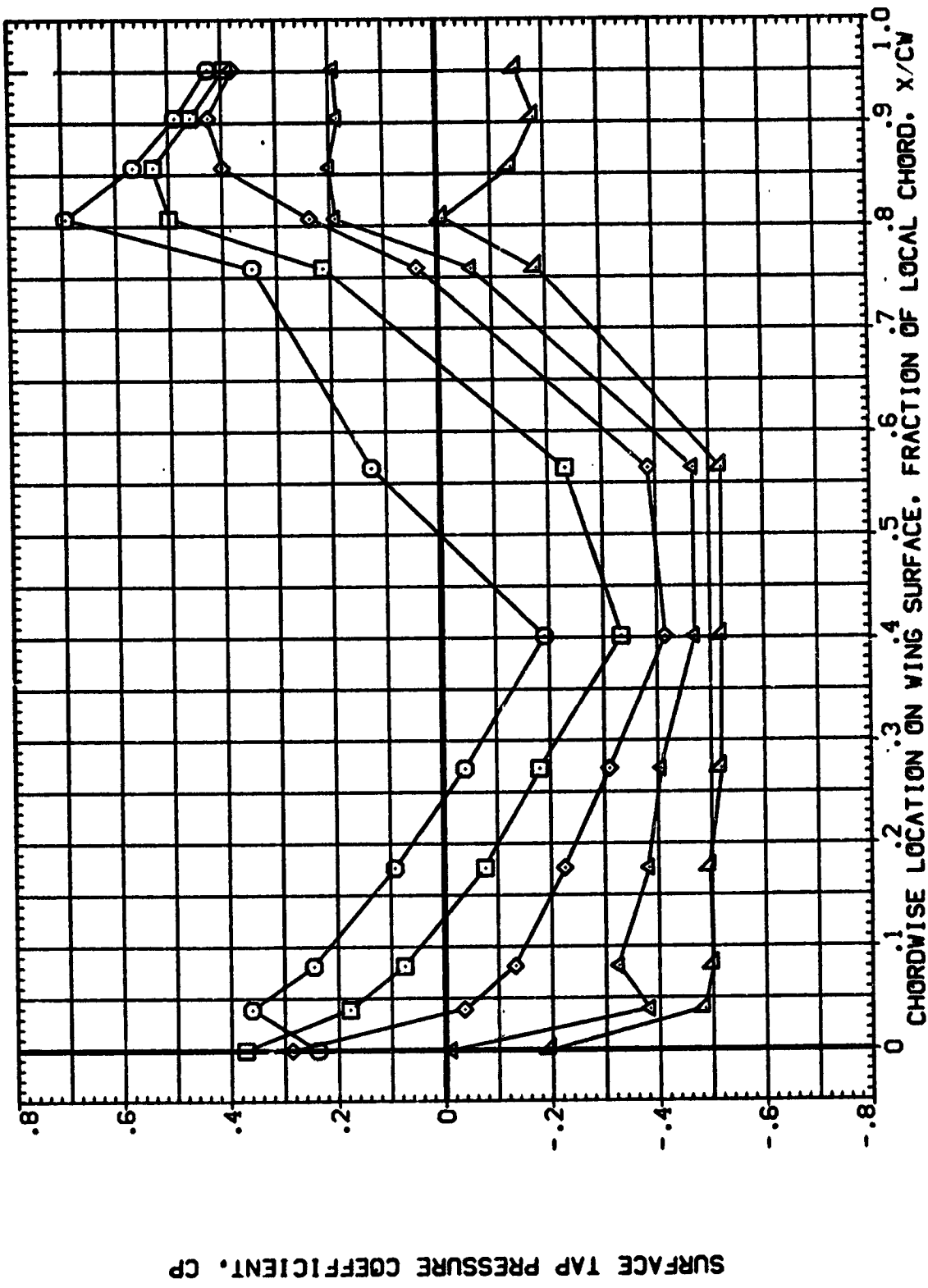


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .573

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

SPDRK
 55.000
 -10.000
 1.250

L-ELVN
 16.300
 -10.000

MACH
 1.250

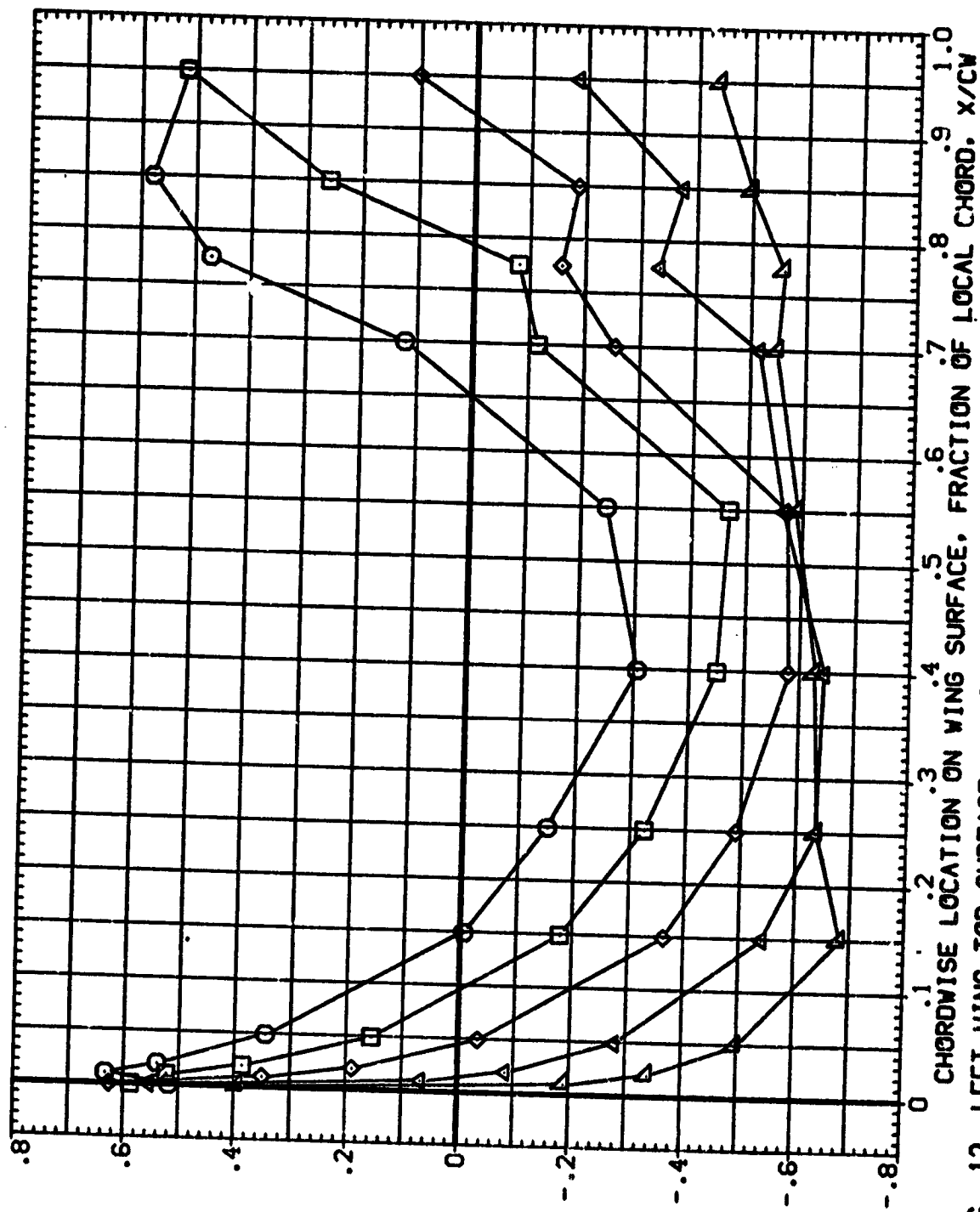


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U72)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES			
					-5.000	SPDRK	55.000	
○	-4.000	.000	.000	80FLAP	1E.300	L-ELVN	-10.000	
□	4.000	.000	.000	R-ELVN	-10.000	MACH	1.250	
◇	8.000	.000	.000					
△	12.000	.000	.000					

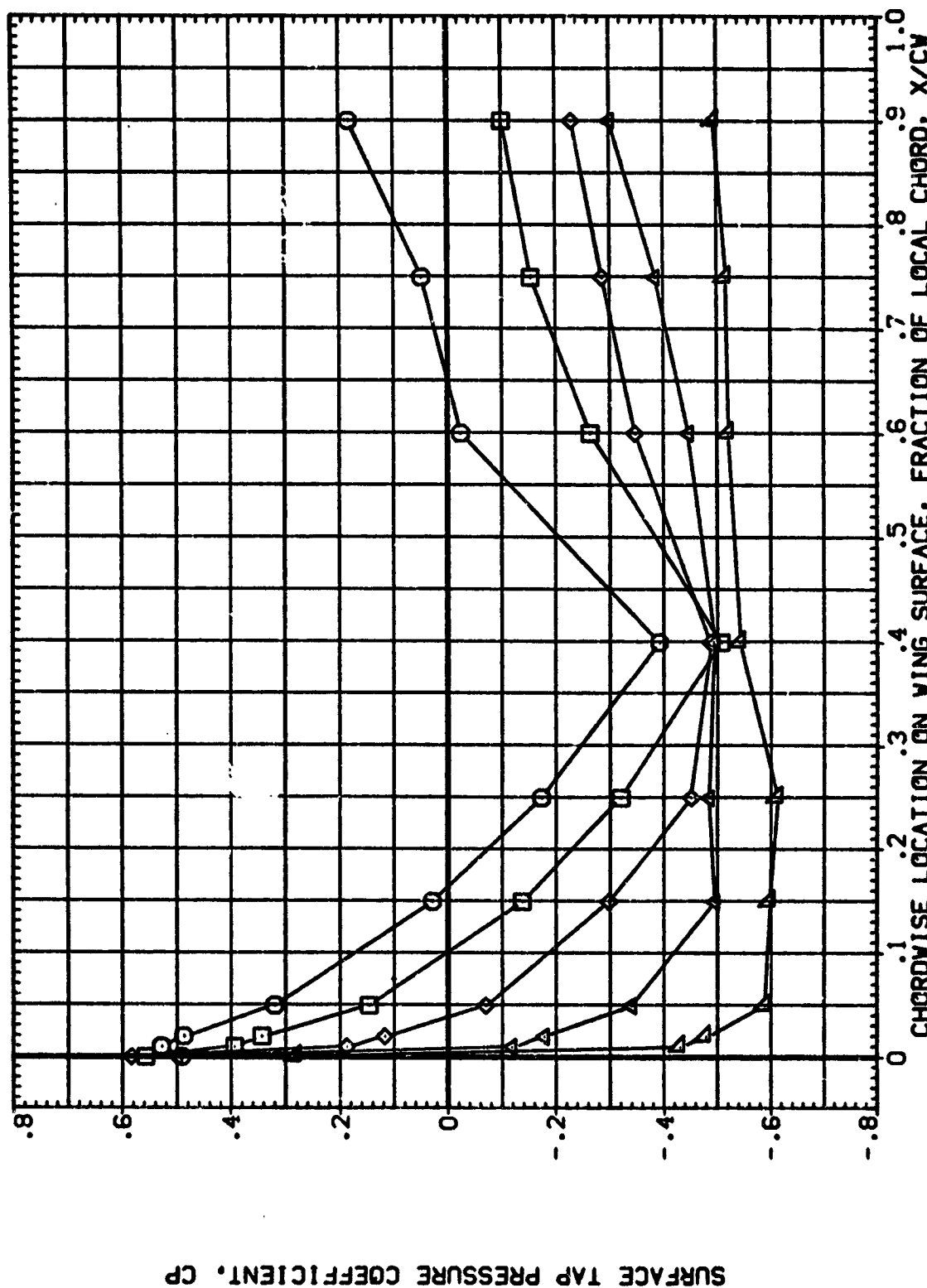


FIG. 12 LEFT WING TOP SURFACE

AMES 11-073(OA148) -140A/B/C ORB LEFT WING TOP(1E8U72)

SYMBOL
 ▽
 ◊
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BN
 .972

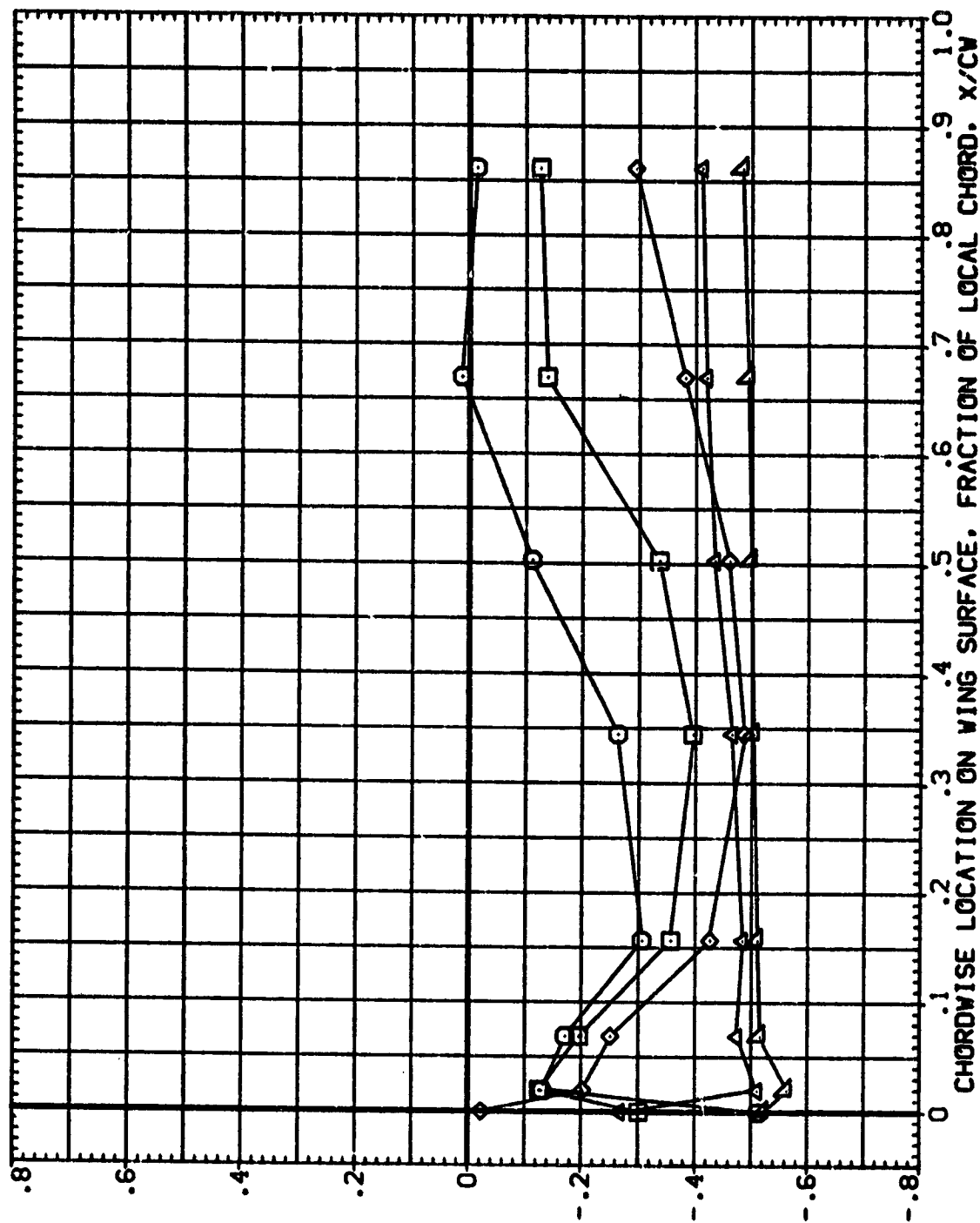
BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 1.250



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U72)

SYMBOL	ALPHA	ZY/BN	BETA	RUDDER	PARAMETRIC VALUES	
○	-4.000	.299	4.000	SPDRBK	-5.000	33.000
□	.000			BDFLAP	16.300	-10.000
◇	4.000			R-ELVN	-10.000	1.250
△	8.000				MACH	
▽	12.000					

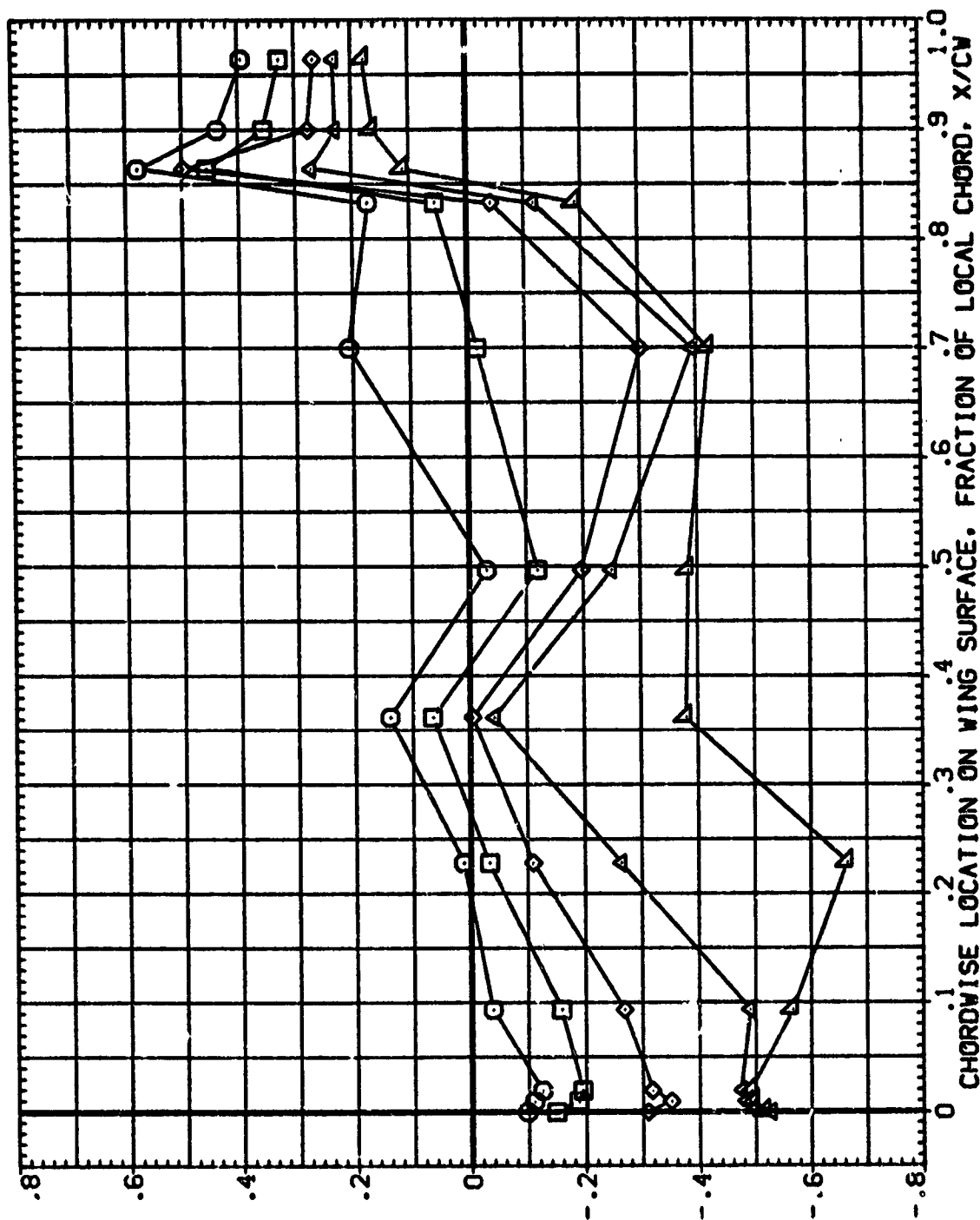


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

21/BV
 .427

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 80FLAP
 R-ELVN

55.000
 -10.000
 1.250

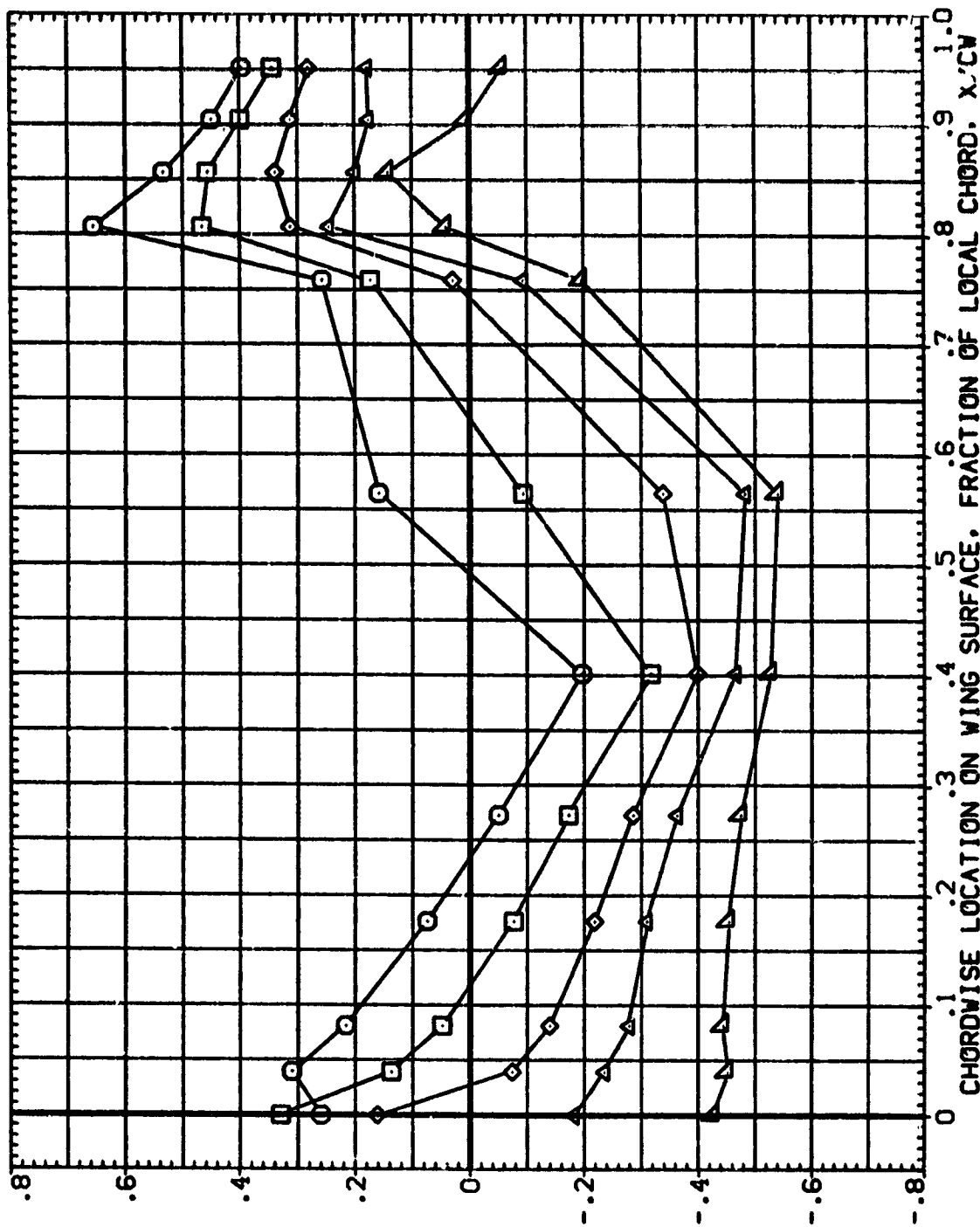


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U72)

SYMBOL	ALPHA	2Y/BN	BETA	PARAMETRIC VALUES
○	-4.000	.673	4.000	RUDDER
□	.000			BOFLAP
◇	4.000			R-ELVN
△	8.000			
▽	12.000			
				SPDRK
				L-ELVN
				MACH

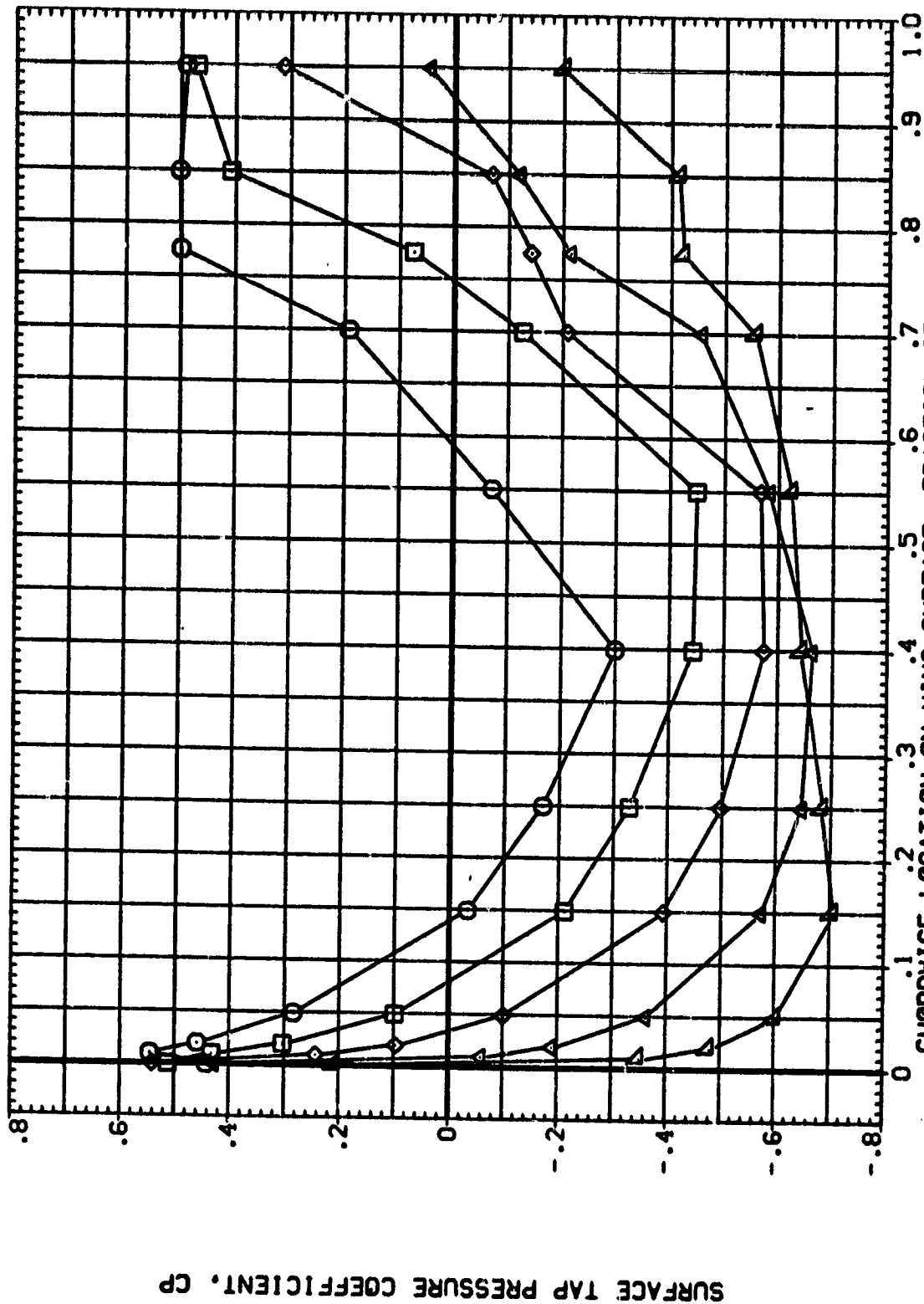


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(CA148) -140A/B/C ORB LEFT WING TOP (IE8U72)

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BV .887
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBK 55.000
 80FLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

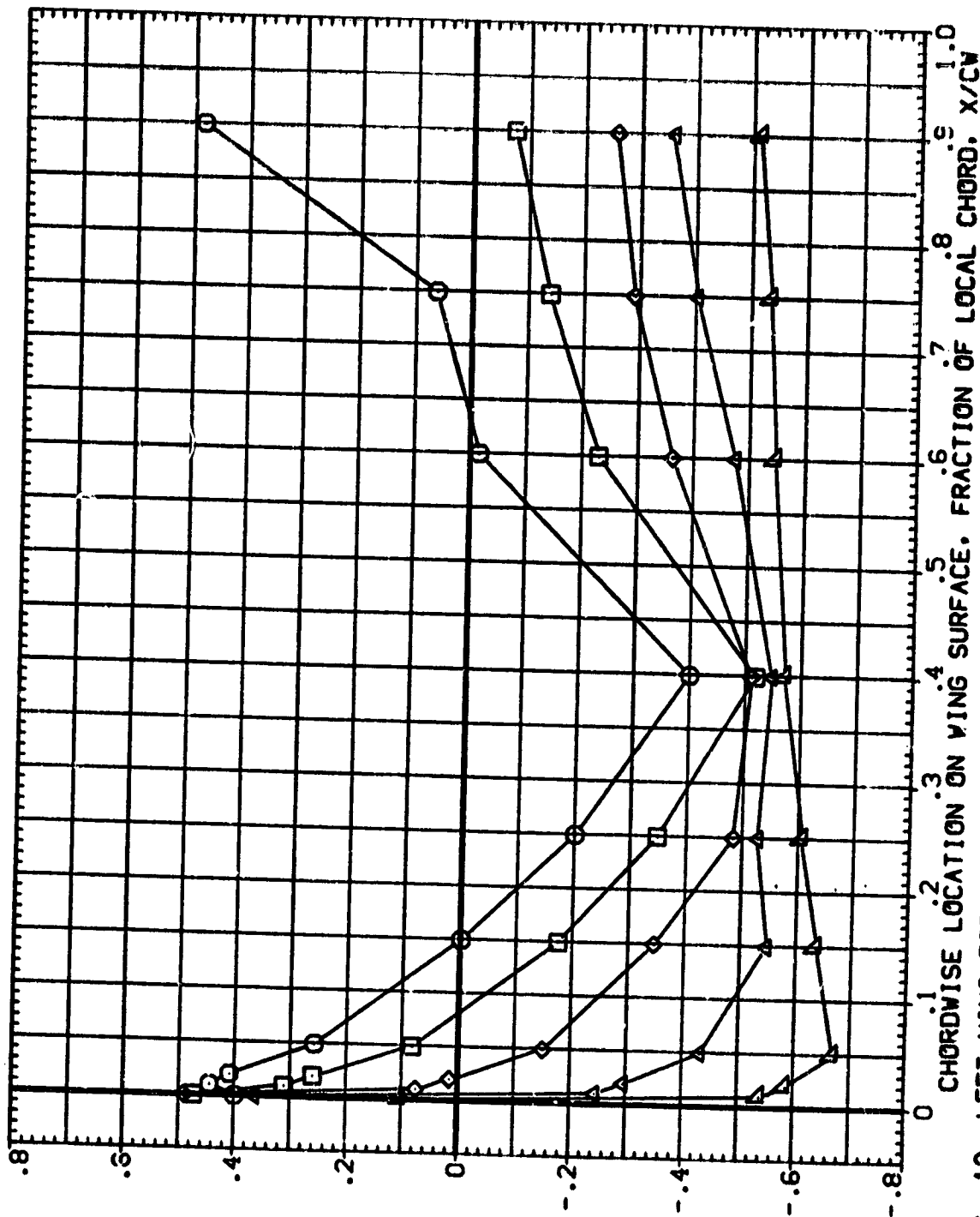


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A14R) -140A/B/C ORB LEFT WING TOP(IE8U72)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

2Y/BW .972

BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDRM 55.000
 SOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.250

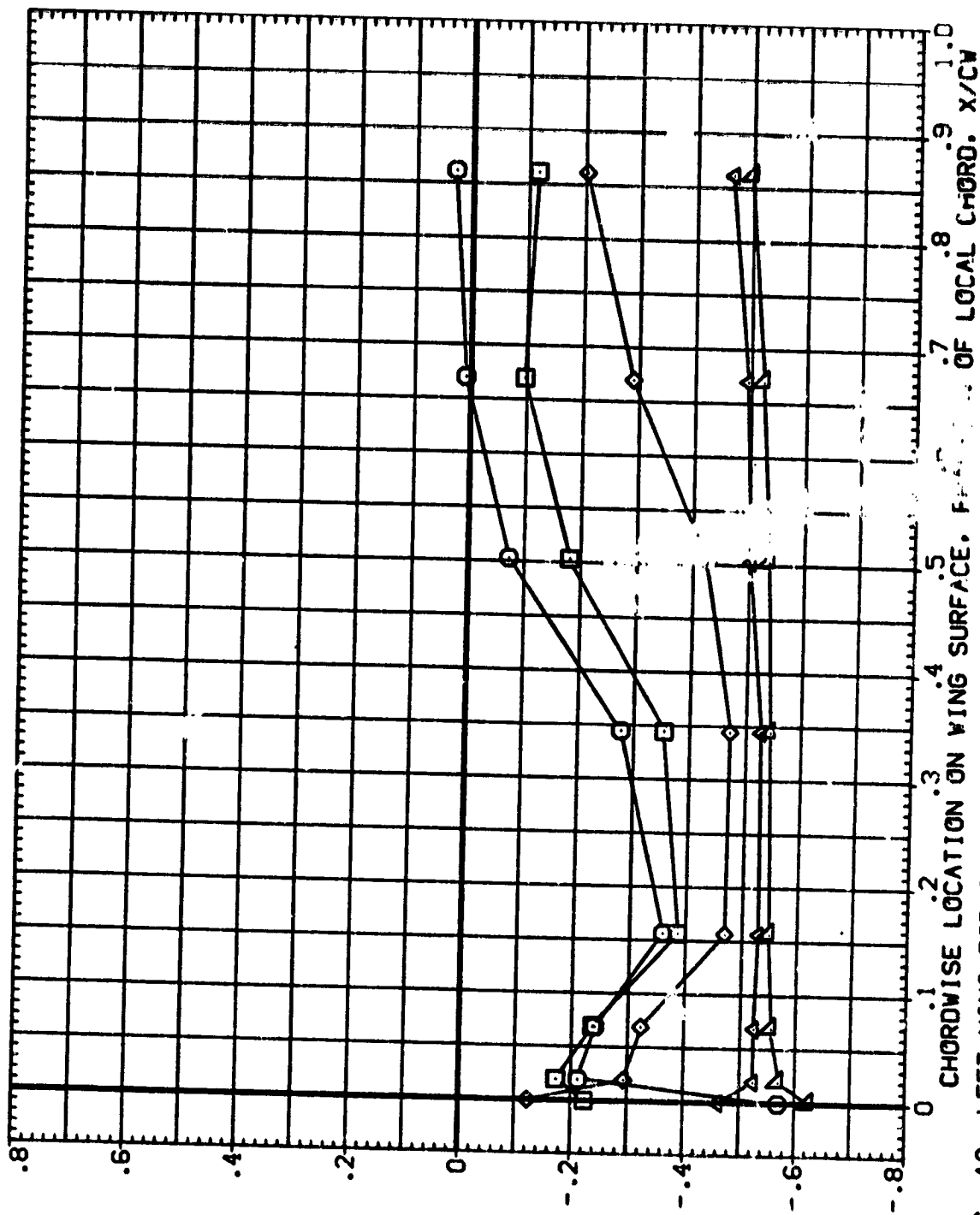


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U71)

SYMBOL
 ▽ ▴ ◊ □ ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BV
 .299

BETA
 -4.000

RUDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES
 -5.000 SPDBRK
 16.300 L-ELVN
 -10.000 MACH

55.300
 -10.000
 1.400

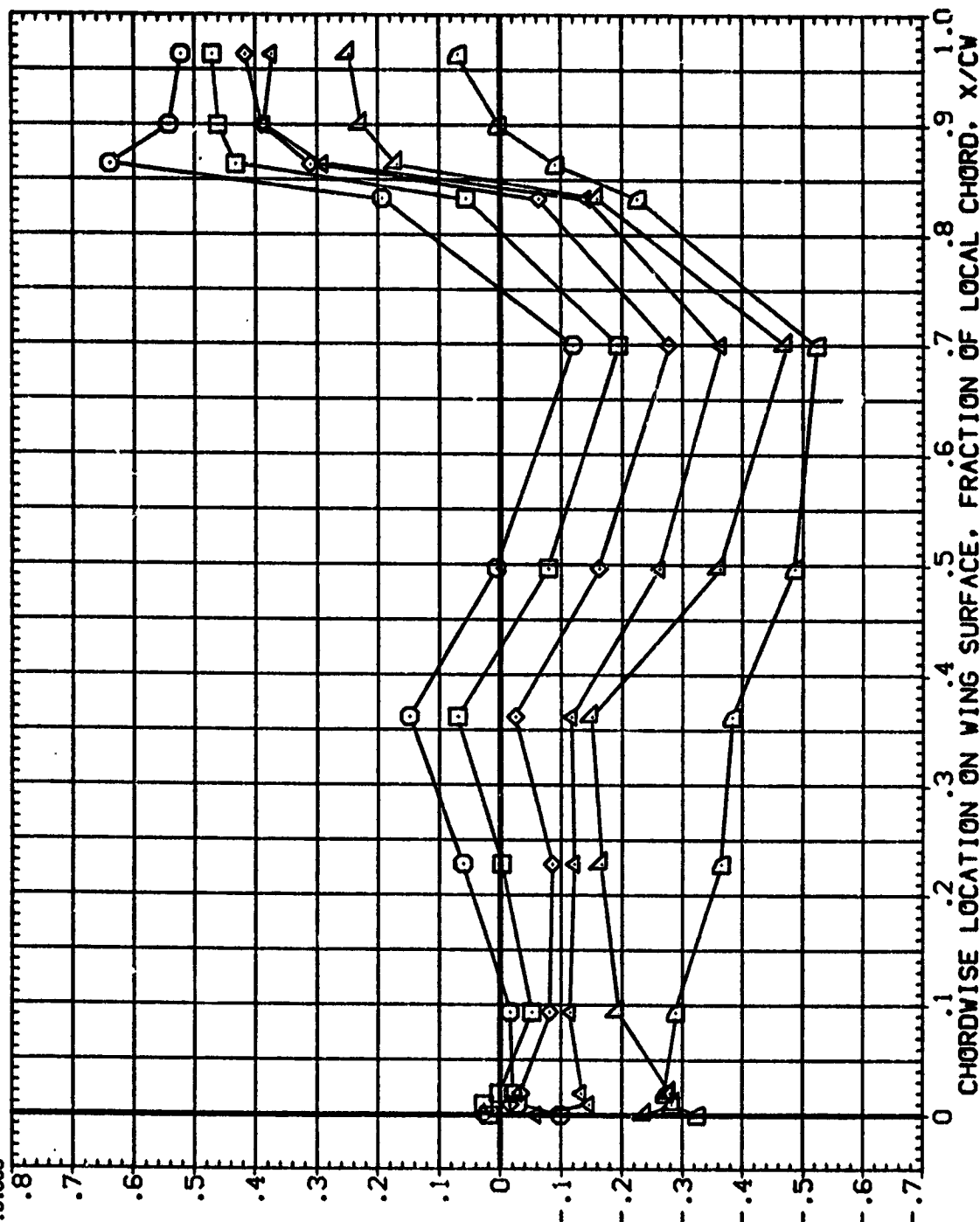


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U71)

SYMBOL	ALPHA	2Y/BV	BETA	RUDDER	PARAMETRIC VALUES	SPDRK	L-ELVN	MACH
○	-4.000	.427	-4.000	BOFLAP	-5.000	16.300	-10.000	55.000
◇	.000			R-ELVN	10.000			1.400
△	4.000							
□	8.000							
▽	12.000							
▽	16.000							

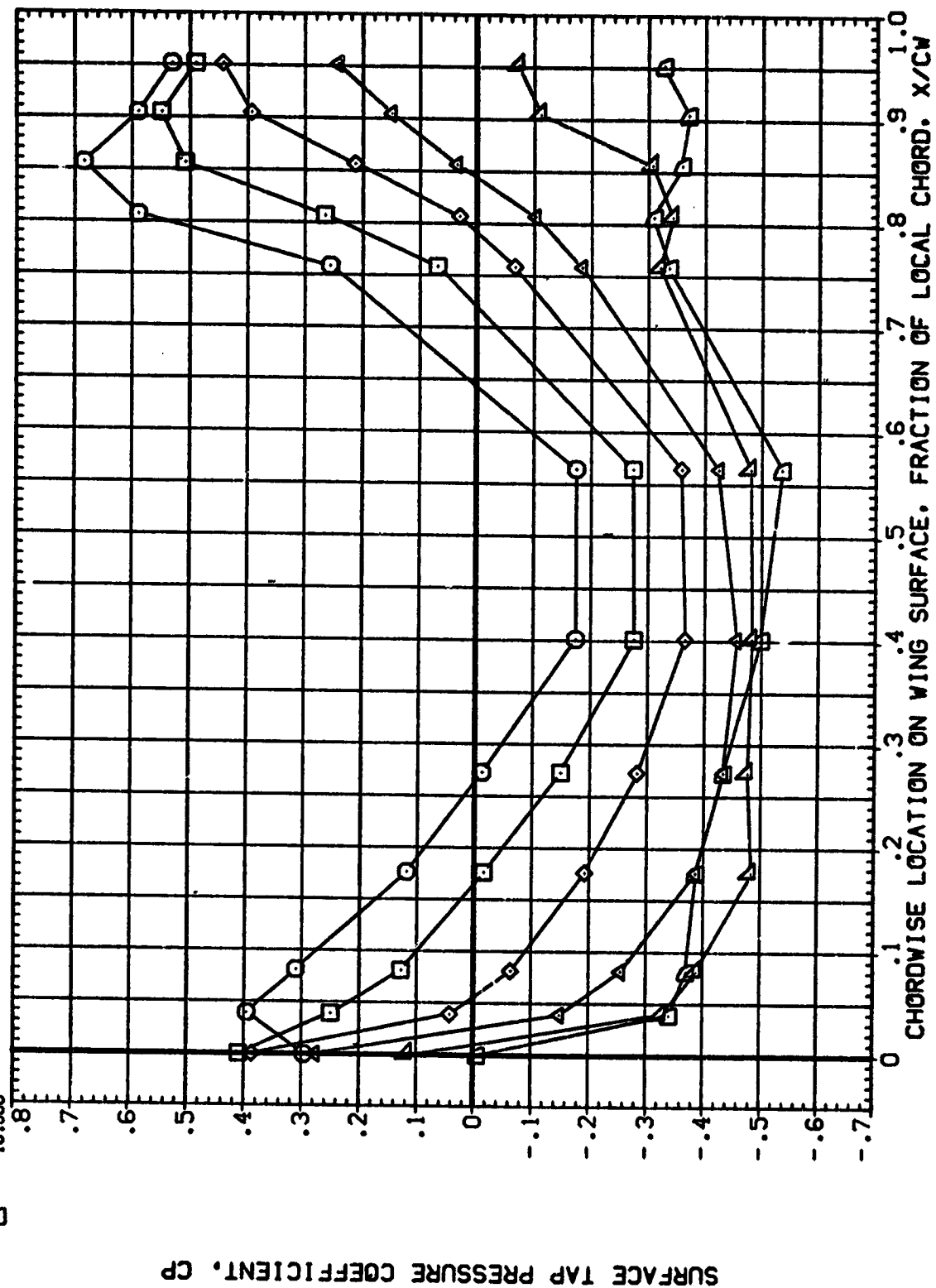


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U71)

SYMBOL
 □ ◇ △ ▽ ▹ ▸

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BW
 .573

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER
 SDFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOILER
 L-ELVN
 MACH

35.000
 -10.000
 1.400

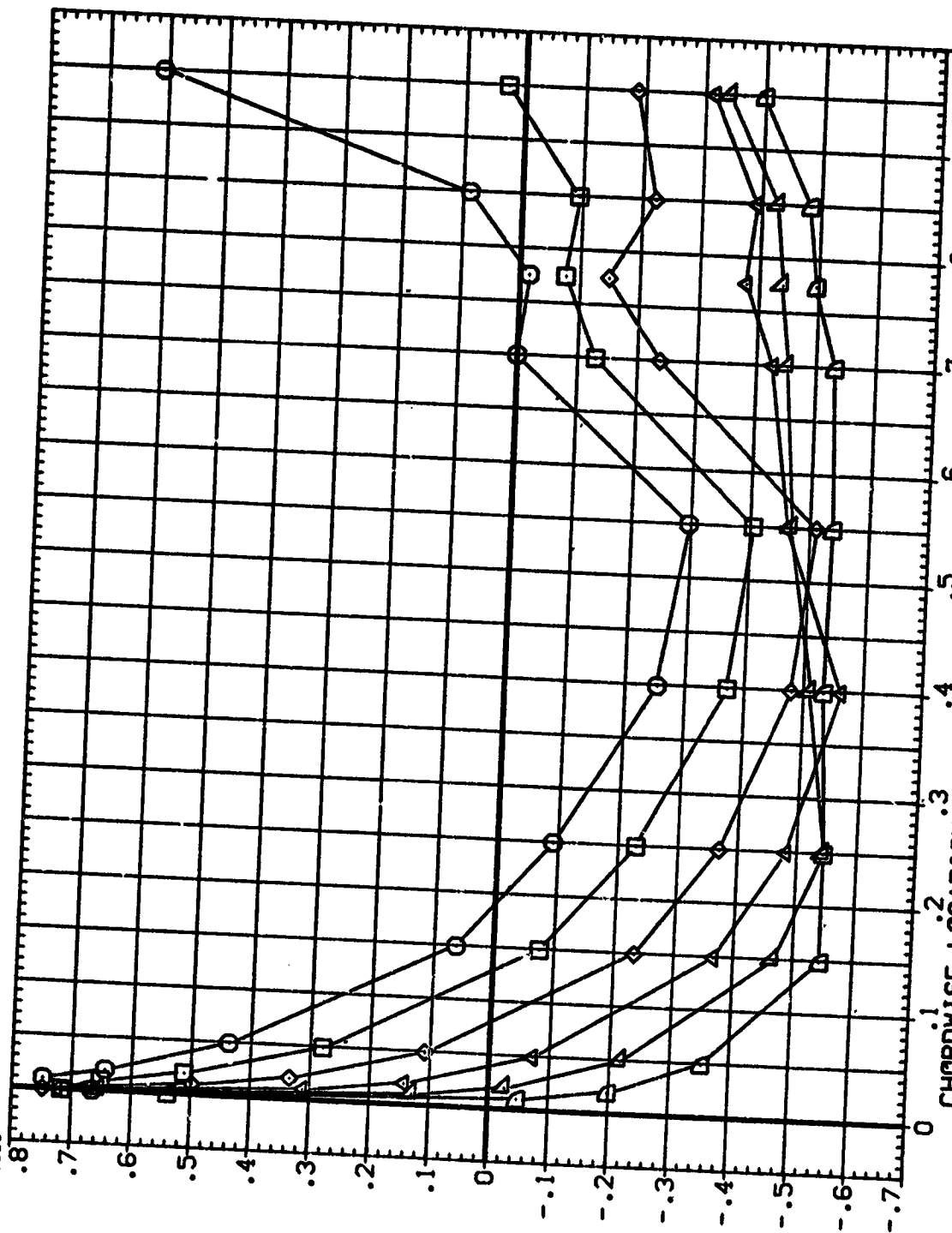


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES
 CHORDWISE LOCATION ON WING SURFACE, FRACTION OF LOCAL CHORD, X/CW

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U71)

SYMBOL	ALPHA	ZY/BV	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.887	-4.000	BOFLAP	-5.000 SPOBRK 55.000
◇	.000			R-ELVN	16.300 L-ELVN -10.000
△	4.000				-10.000 MACH 1.400
▽	8.000				
▽	12.000				
▽	16.000				

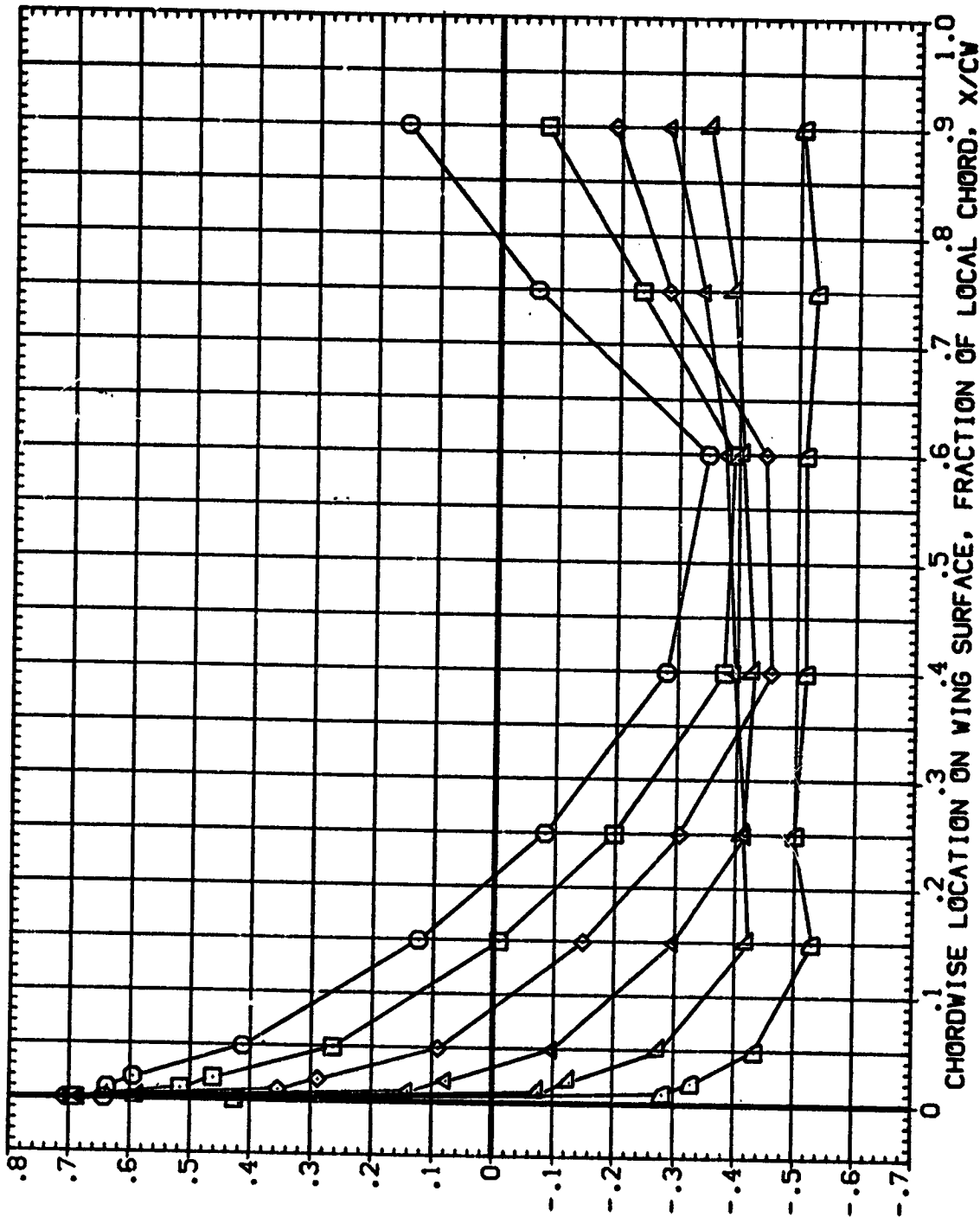


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U71)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

ZY/BN
 .972

BETA
 -4.000

PARAMETRIC VALUES

RUDDER
 80FLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 1.400

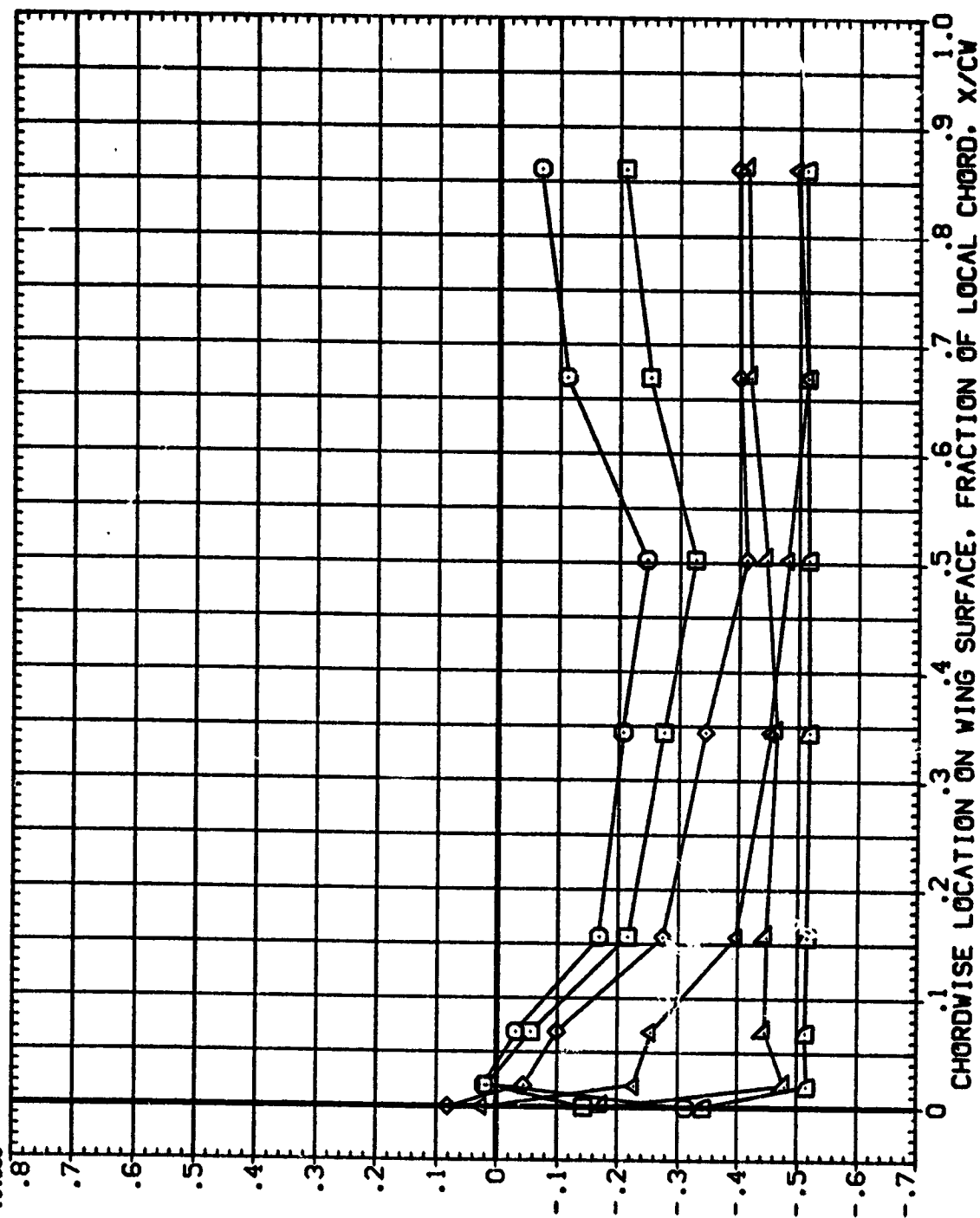


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

	PARAMETRIC VALUES
RUDDER	-5.000
BOFLAP	16.300
R-ELVN	-10.000
	MACH
	1.400
	-10.000
	SPDRBK
	55.000

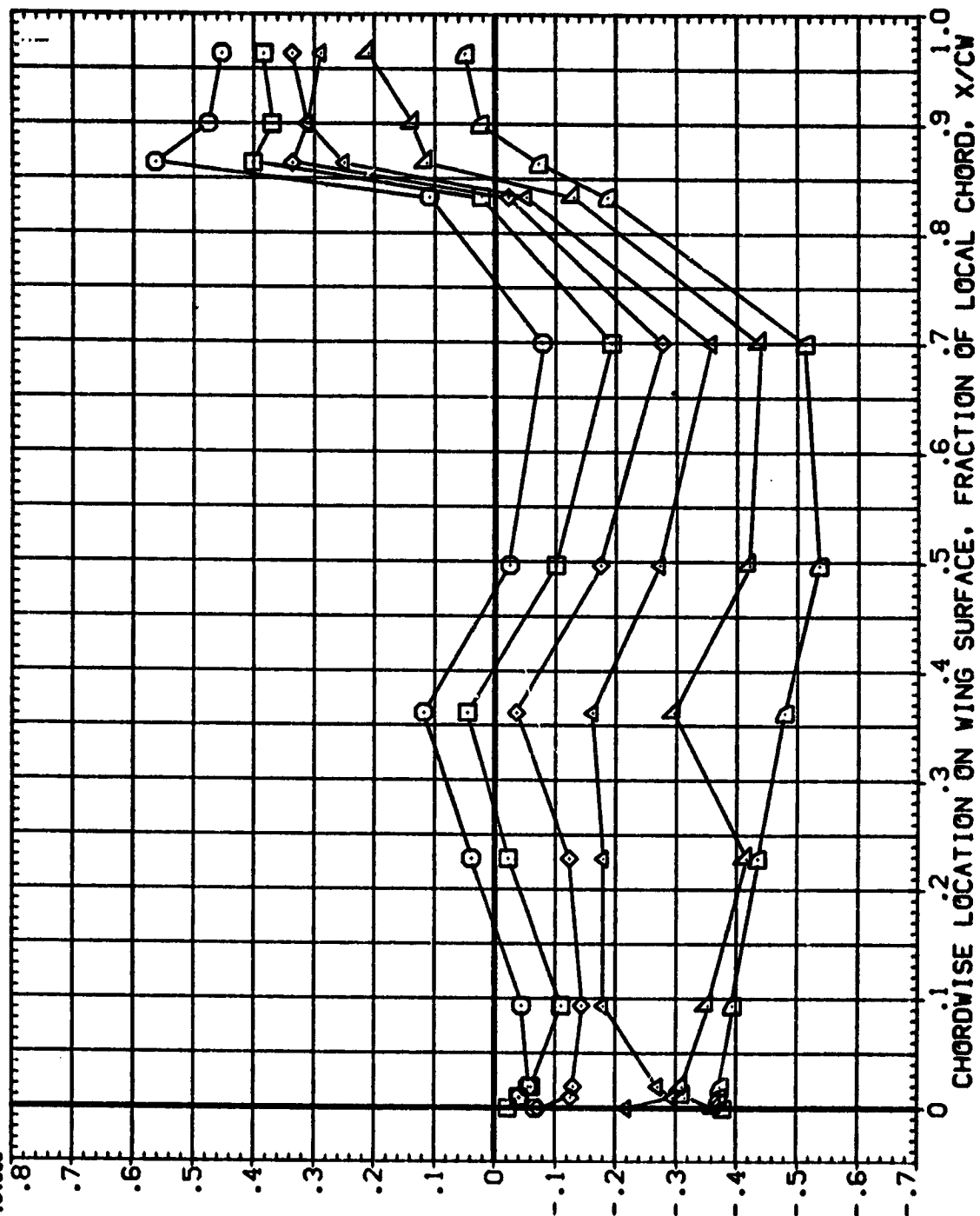


FIG. 12 LEFT WING TOP SURFACE ELEVEN DEGREE DEFLECTION 10 DEGREES

PARAMETRIC VALUES
 RUDDER -5.000 SPDBRK 55.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.400

ALPHA 27/8V BETA .000
 -4.000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ ○ △

SURFACE TAP PRESSURE COEFFICIENT, CP

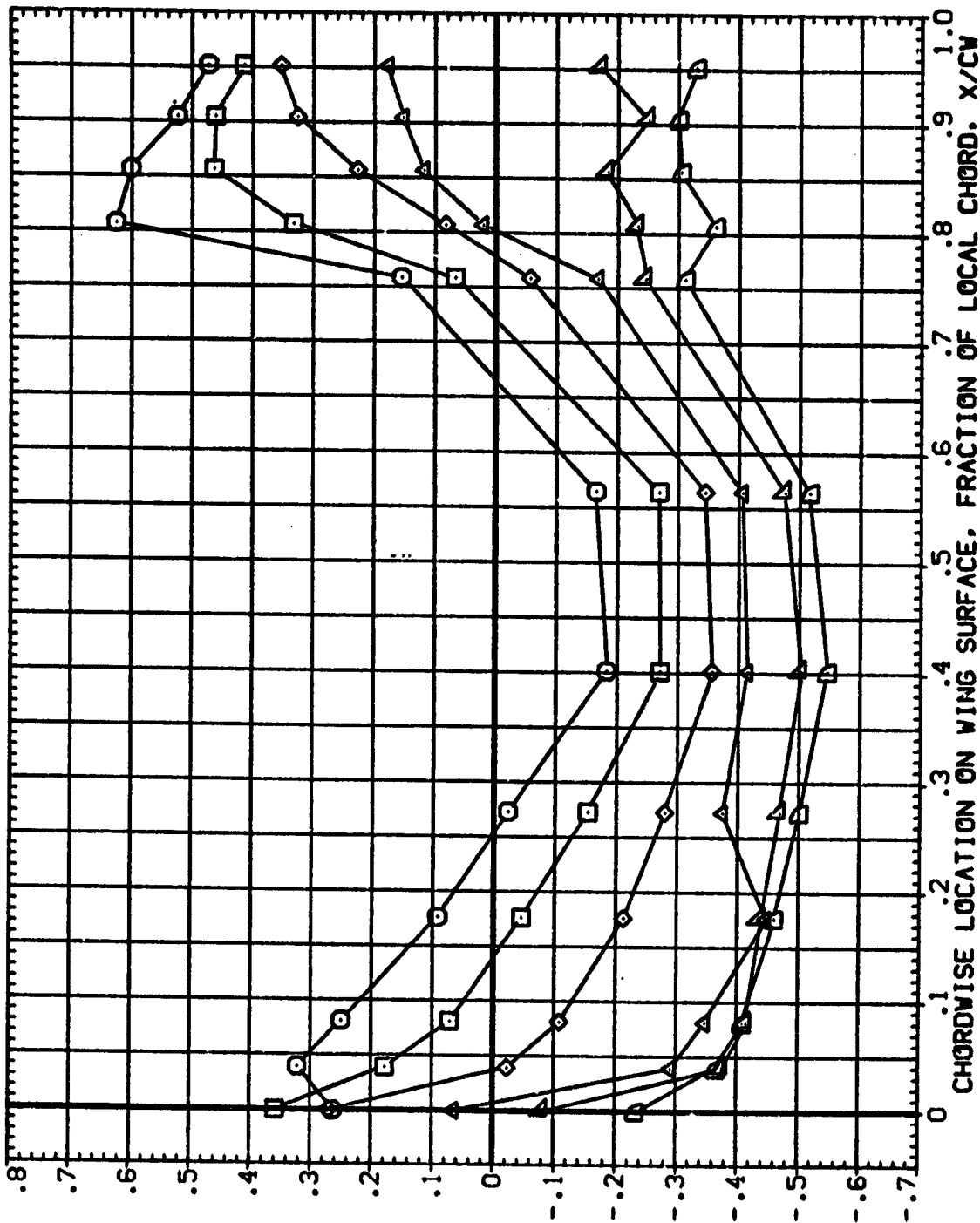


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U71)

SYMBOL
 ▽ ▴ ◊ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/8V BETA
 .673 .000

PARAMETRIC VALUES
 RUDDER -5.000 SPOBRK 95.000
 BOFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.400

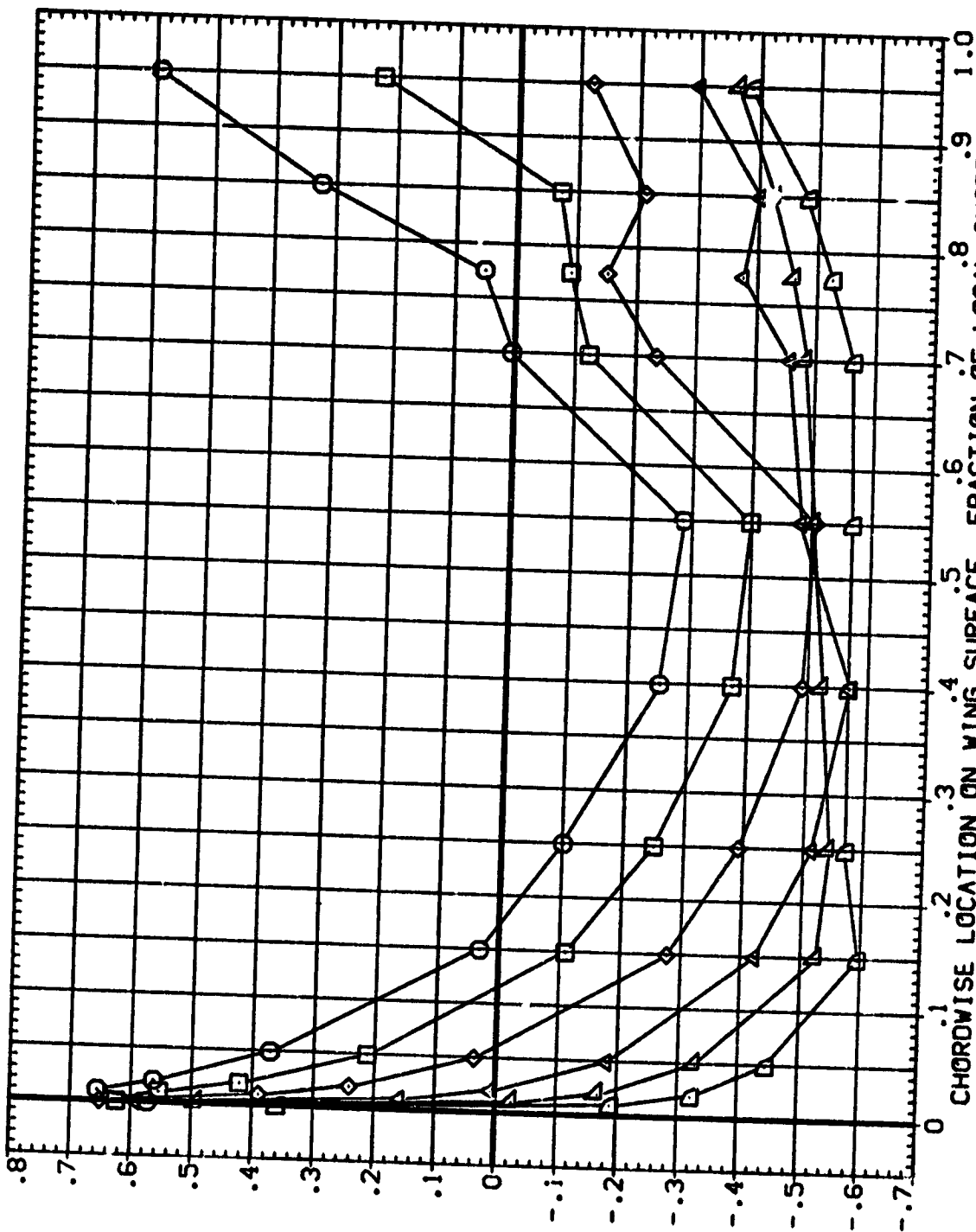


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ▽
 ▴
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BV
 .887

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPOBRK
 L-ELVN
 MACH

55.000
 -10.000
 1.400

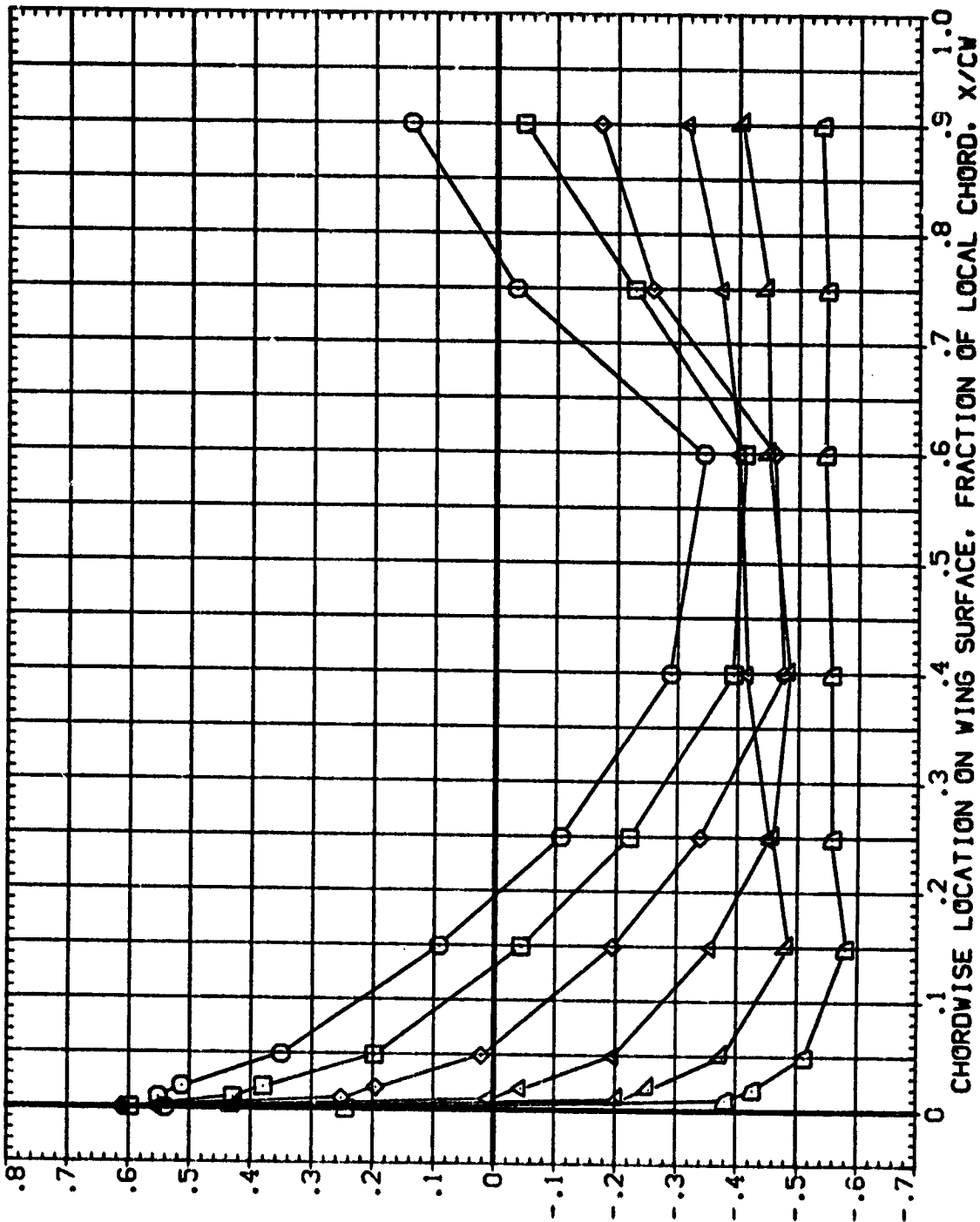


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(GA148) -140A/B/C ORB LEFT WING TOP(IE8U71)

SYMBOL
 ▽ ▴ ◇ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BV
 .972

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BDFLAP
 R-ELVN

-5.000
 16.300
 -10.000

SPDRBK
 L-ELVN
 MACH

95.000
 -10.000
 1.400

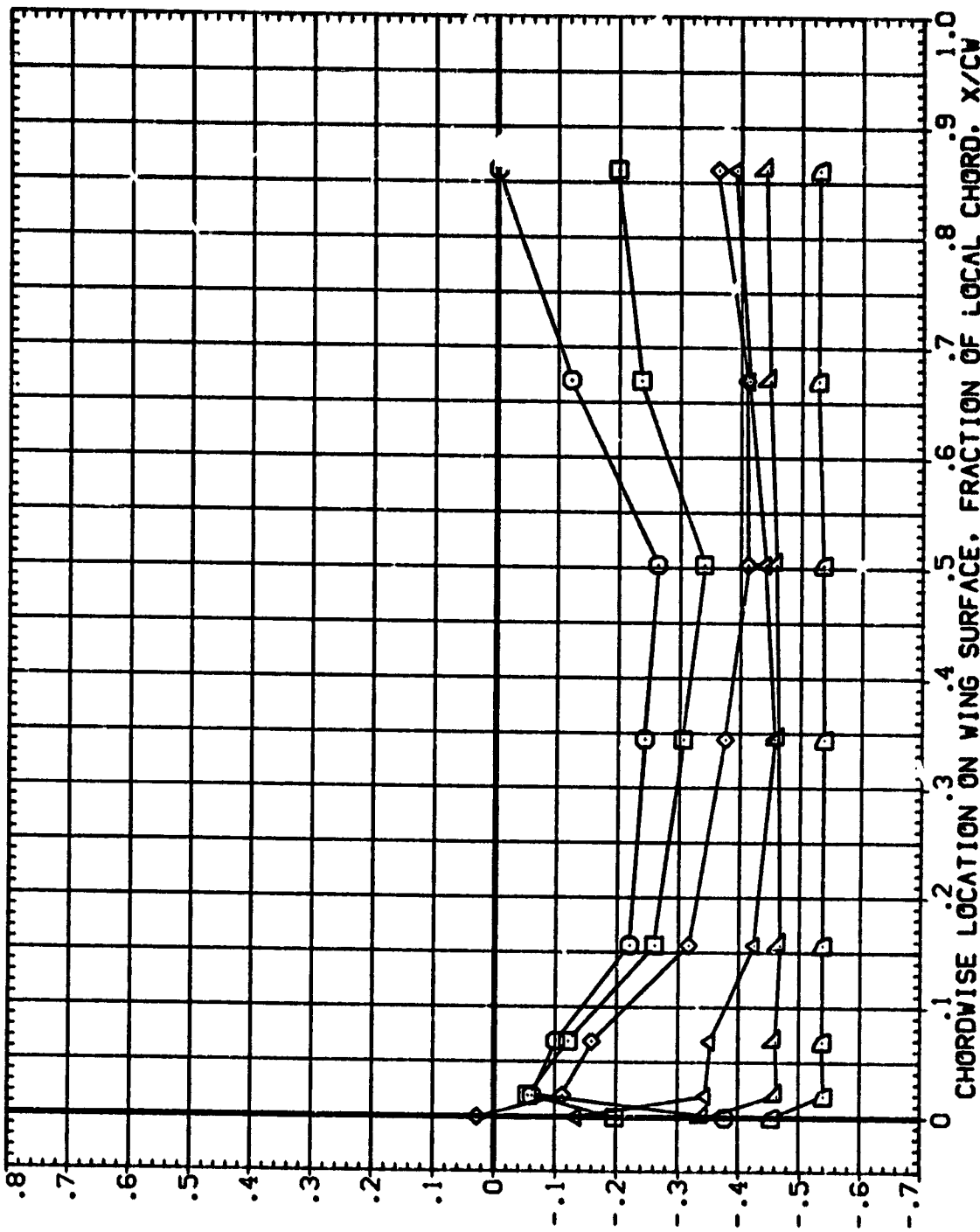


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(IE8U71)

SYMBOL
 ▽
 ▴
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BN
 .299

BETA
 4.000

PARAMETRIC VALUES
 RUDDER 5.000 SPDRBK 55.000
 SUPFLAP .300 L-ELVN -10.000
 R-ELVN .000 MACH 1.400

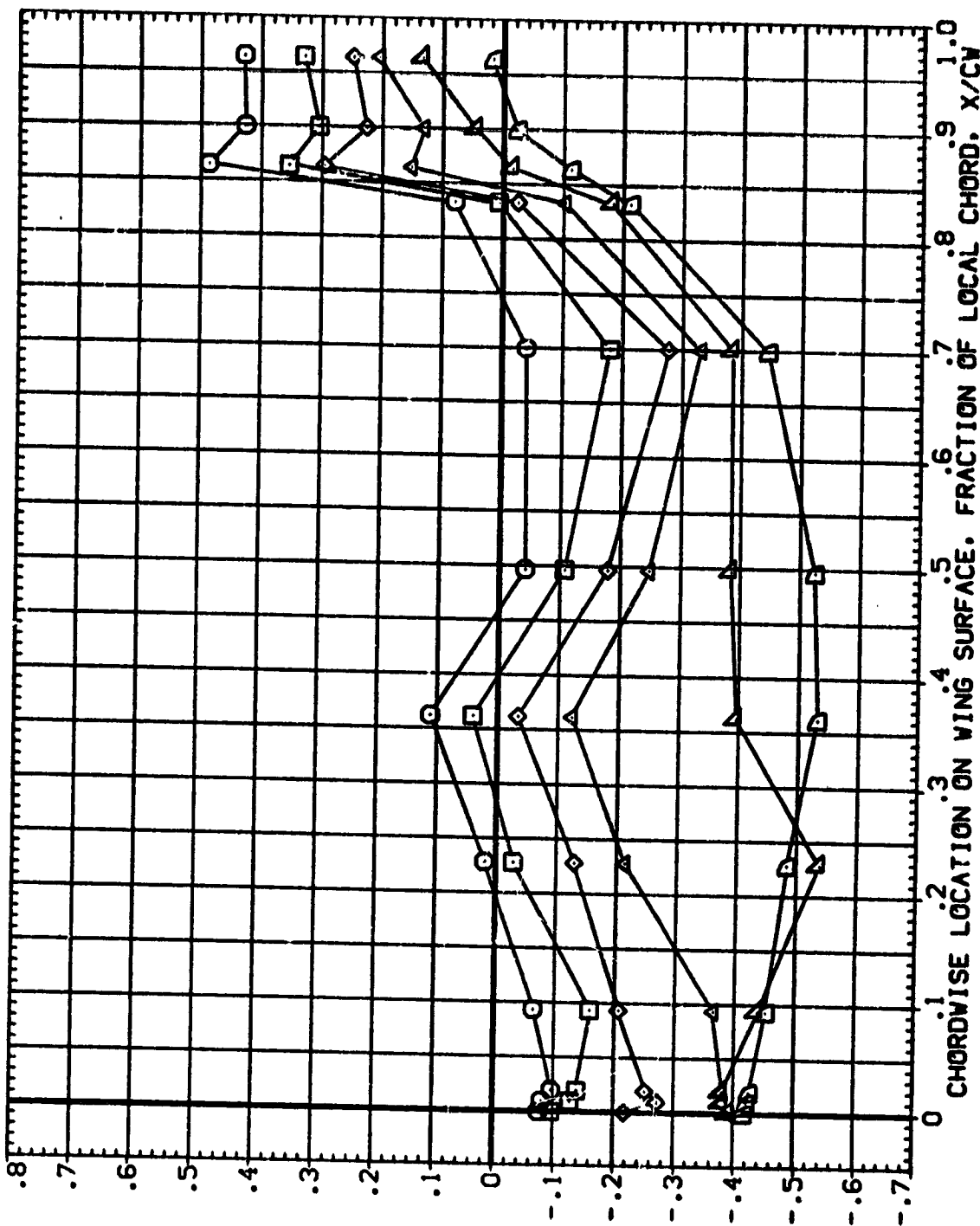


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U71)

SYMBOL
 ▽
 ▴
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

2Y/BN .427
 BETA 4.000

PARAMETRIC VALUES
 RUDDER -5.000
 80FLAP 16.300
 R-ELVN -10.000

SPDRK 35.000
 L-ELVN -10.000
 MACH 1.400

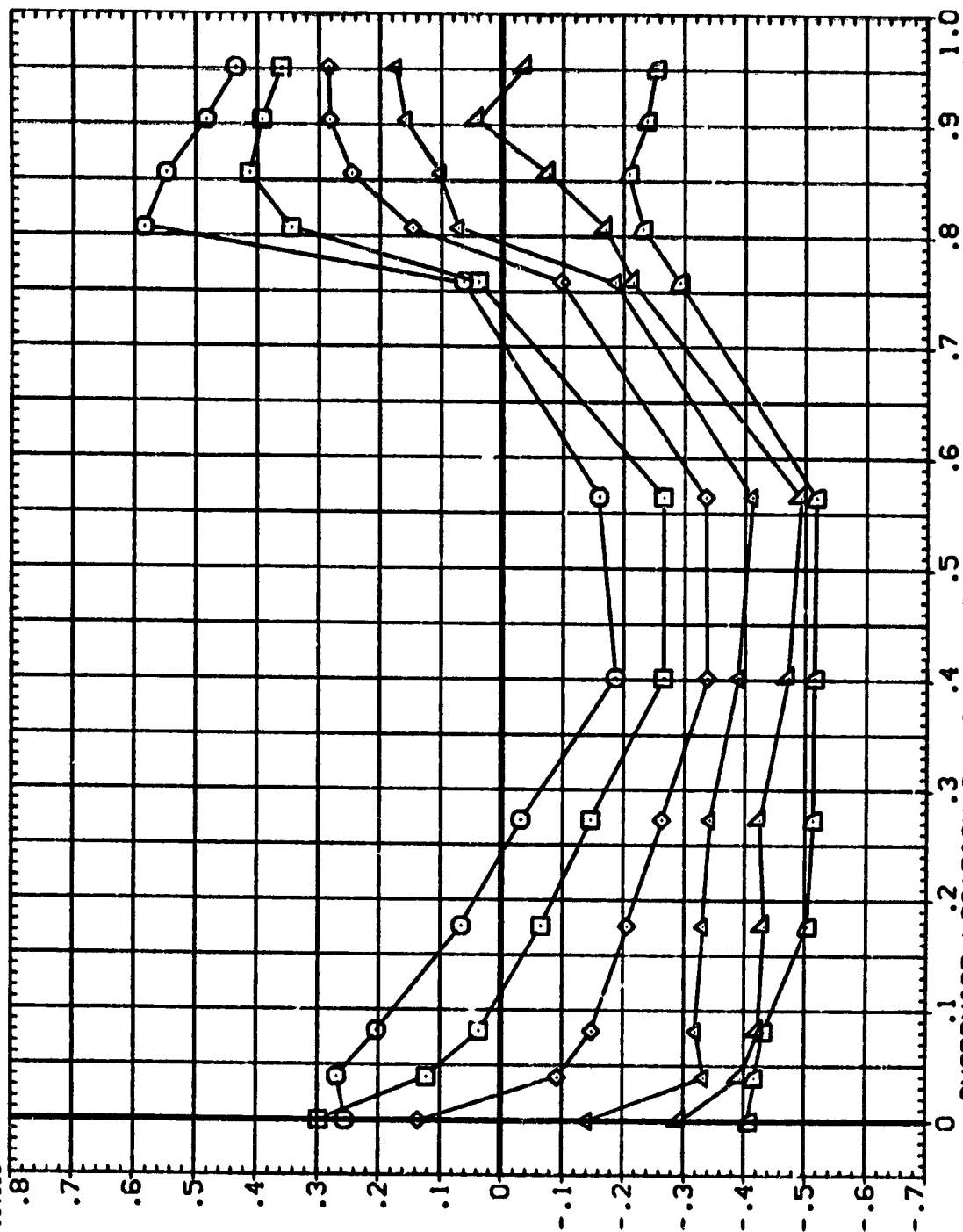


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

SYMBOL
 ○
 △
 ◇
 □
 ◻

ALPHA
 -4.000
 4.000
 8.000
 12.000
 16.000

ZI/BV BETA
 .673 4.000

PARAMETRIC VALUES
 RUDDER -5.000 SPDBRM 55.000
 BDFLAP 16.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.400

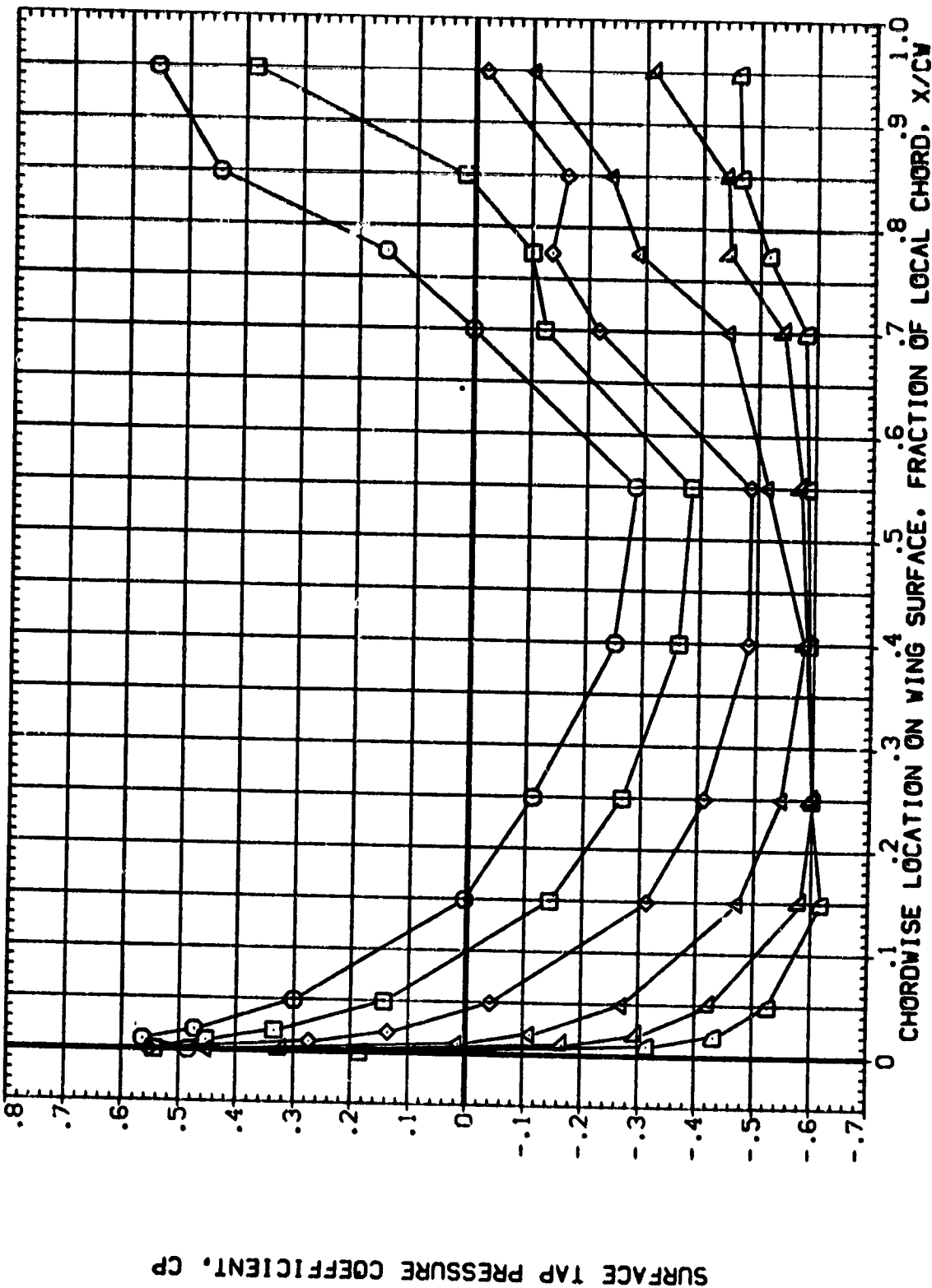


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C ORB LEFT WING TOP(1E8U71)

PARAMETRIC VALUES
 RUDDER -5.000 SPDRBT 55.000
 BDFLAP :6.300 L-ELVN -10.000
 R-ELVN -10.000 MACH 1.400

ALPHA 27/BN BETA
 -4.000 .887 4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ △ ▽ ▹ ▸

SURFACE TAP PRESSURE COEFFICIENT, CP

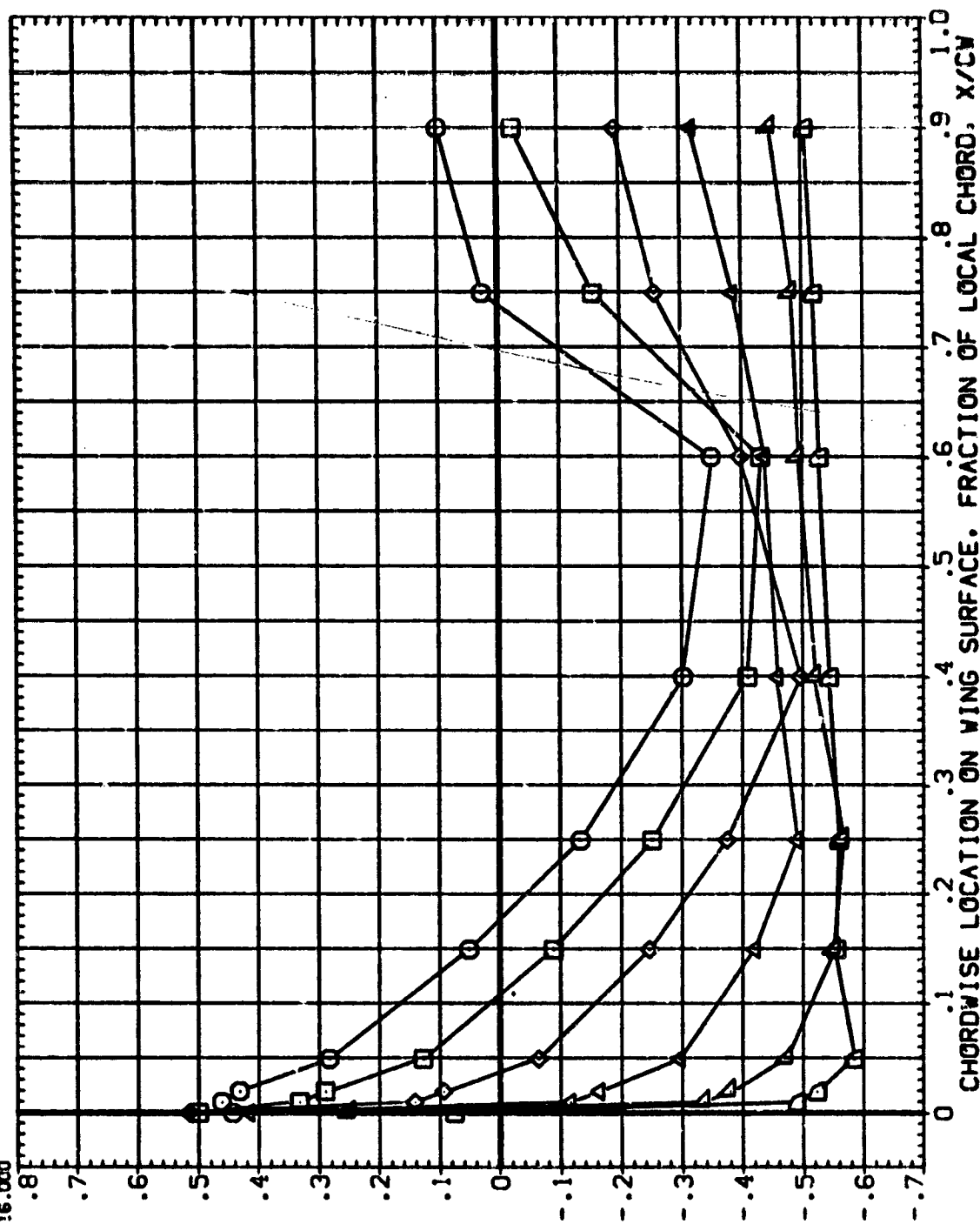


FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C GRB LEFT WING TOP(1E8U71)

SYMBOL

ALPHA
-4.000
.000
4.000
8.000
12.000
16.000

2Y/BV .972

BETA 4.000

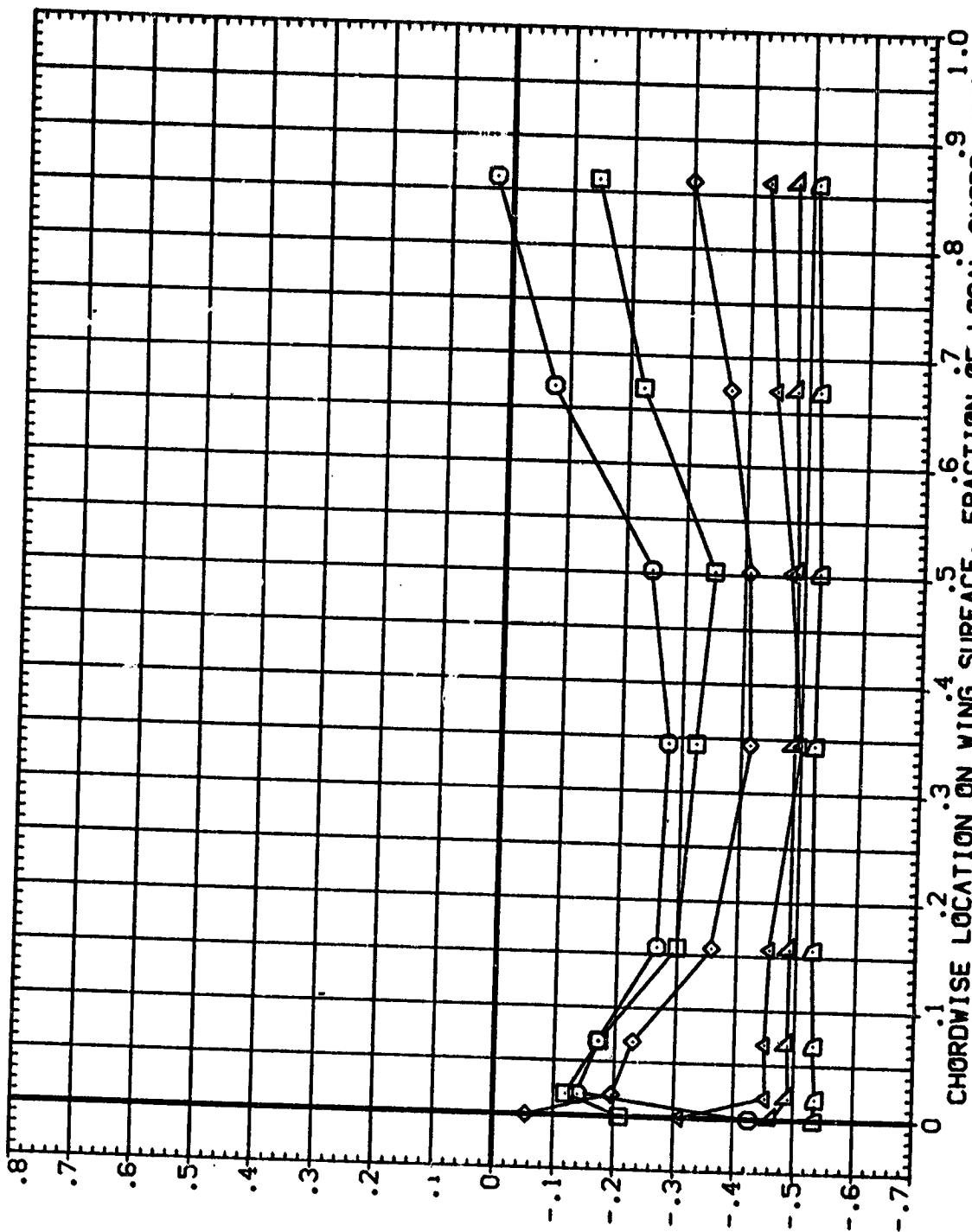
PARAMETRIC VALUES

RUDDER
80FLAP
R-ELVN

-5.000
16.300
-10.000

SPDRM
L-ELVN
MACH

55.000
-10.000
1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 12 LEFT WING TOP SURFACE ELEVON DEFLECTION 10 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .316

BETA
 -8.000

PARAMETRIC VALUES

RUDDER	SPDBRK	L-ELVN	MACH
BDFLAP	.000	.000	.000
R-ELVN	.000	.000	.600

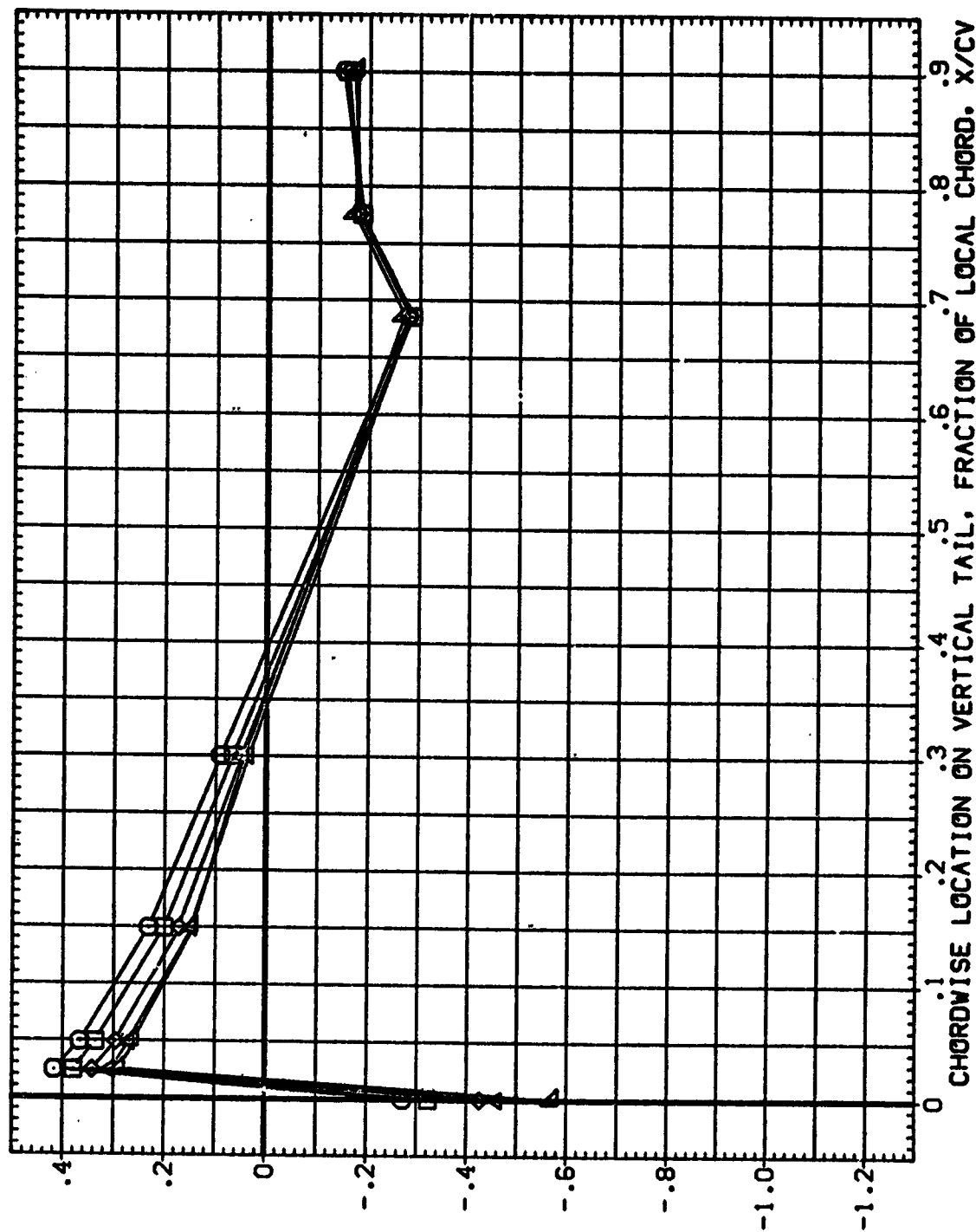


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V27)

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600

BETA
 -8.000

PARAMETRIC VALUES
 RUDDER .000
 BUFLAP .000
 R-ELVN .000

SPOBRK .000
 L-ELVN .000
 MACH .500

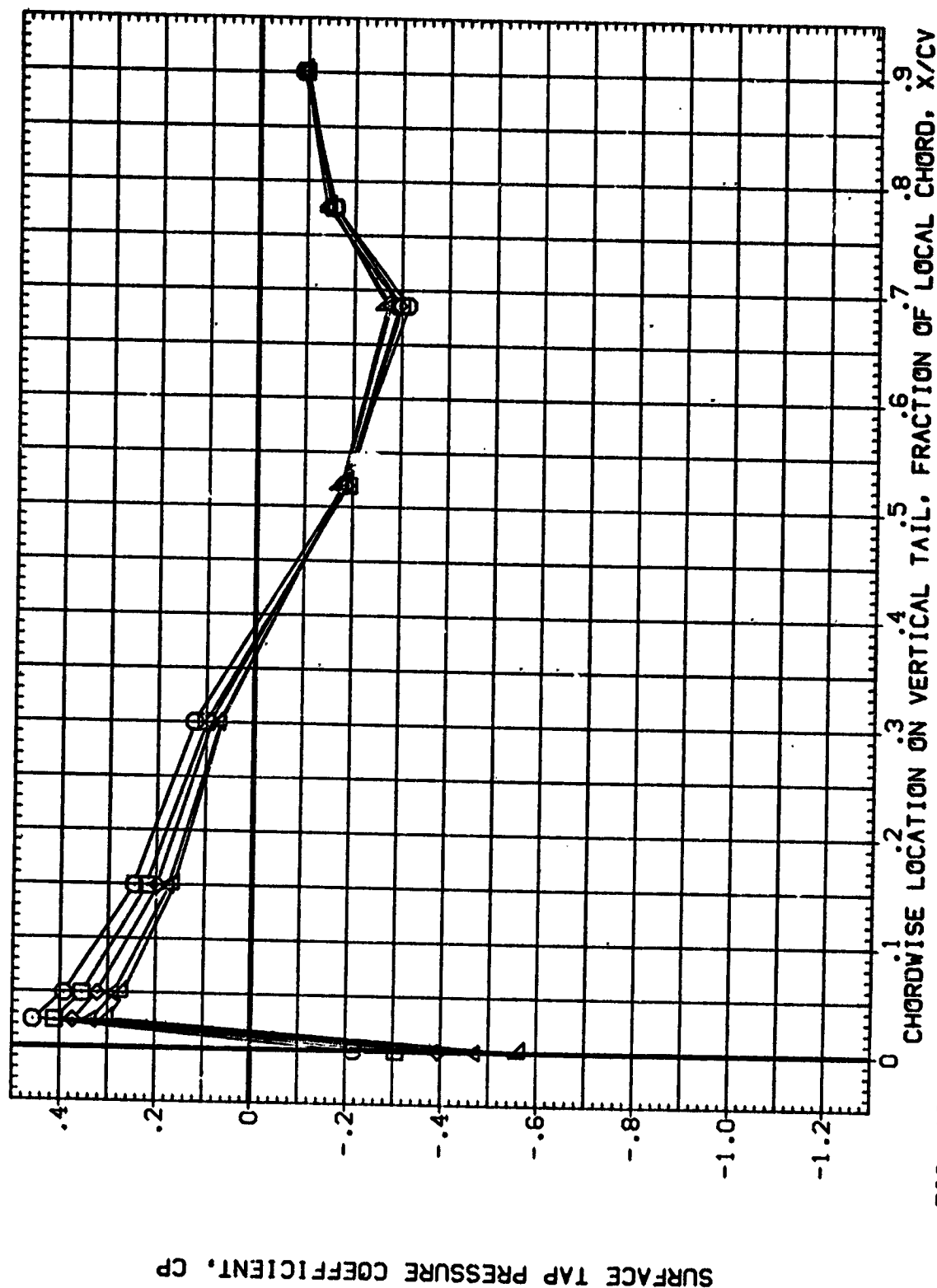


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
▽	-4.000	.840	-8.000	RUDDER .000 SPOBRK .000
◇	.000			BOFLAP .000 L-ELVN .000
□	4.000			R-ELVN .600
△	8.000			
	12.000			

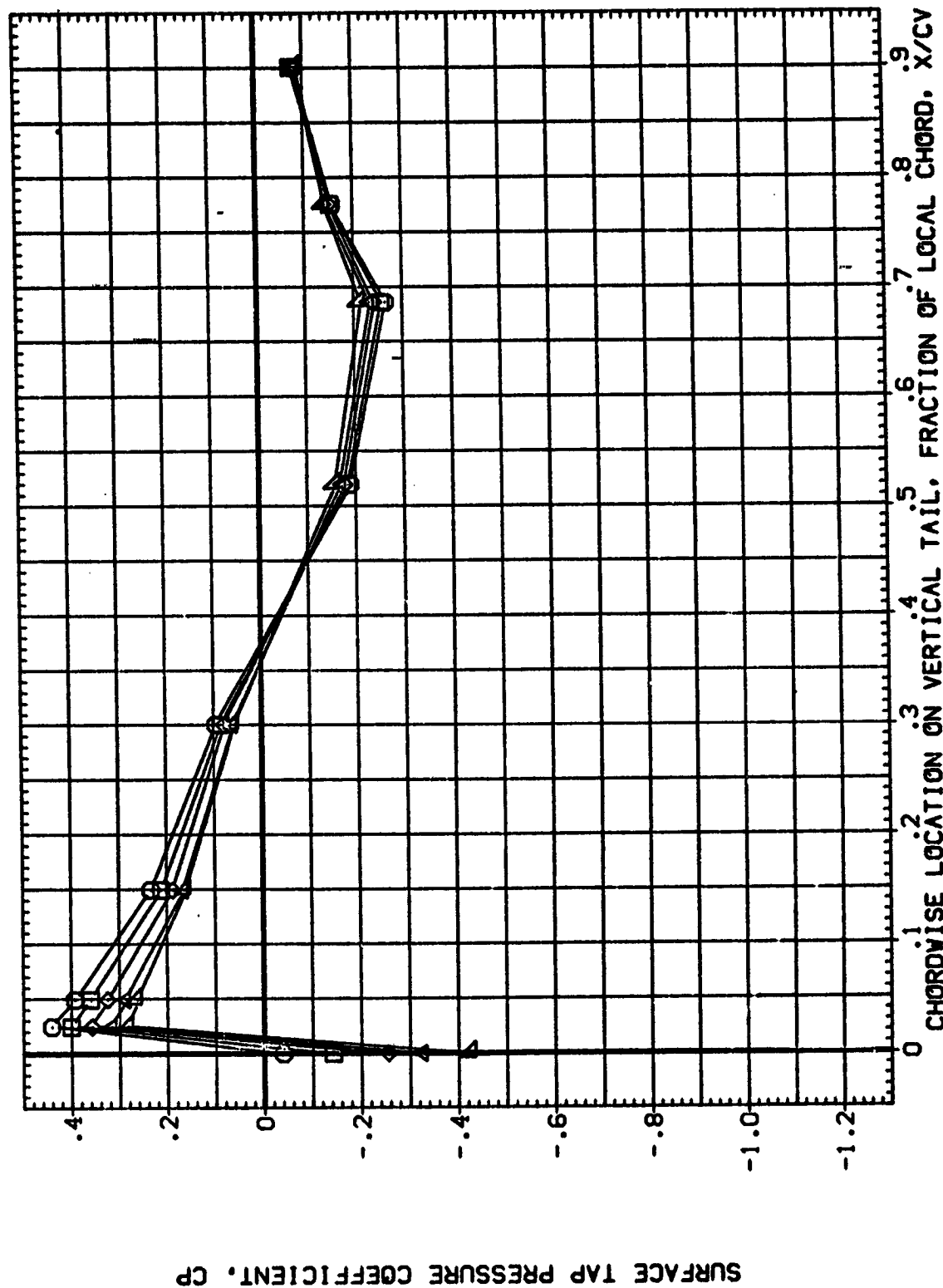


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

SYMBOL
▽◇□○

ALPHA
-4.000
.000
4.000
8.000
12.000

Z/BV
.925

BETA
-8.000

PARAMETRIC VALUES

RUDDER
8DFLAP
R-ELVN

.000
.000
.000

SPDBRK
L-ELVN
MACH

.000
.000
.600

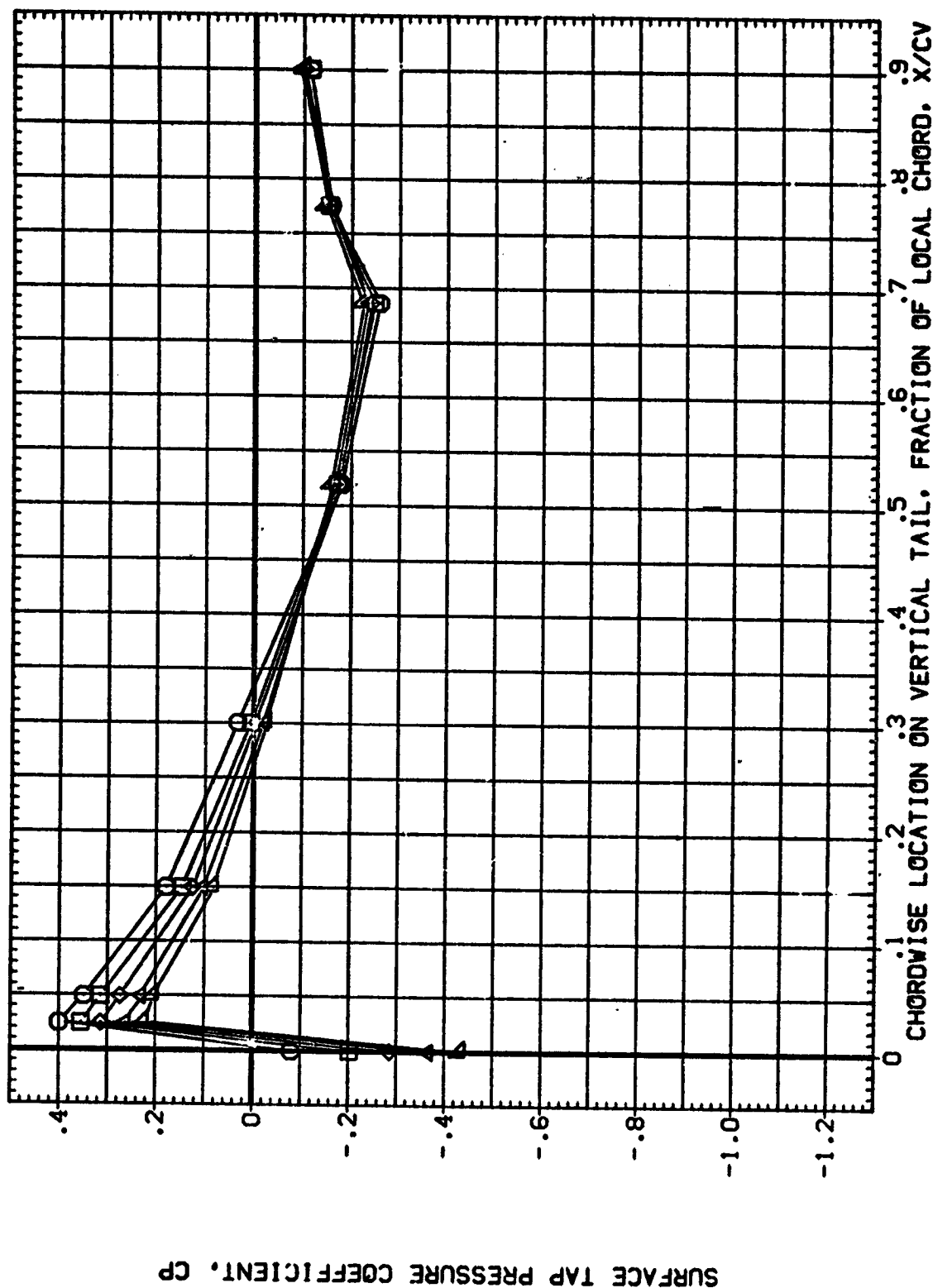


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(CA148) -140A/B/C/R ORB VERTICAL

(1E8V27)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

Z/BV .316
BETA -4.000

PARAMETRIC VALUES
RUDDER .000 SPOBRK .000
BOFLAP .000 L-ELVN .000
R-ELVN .000 MACH .600

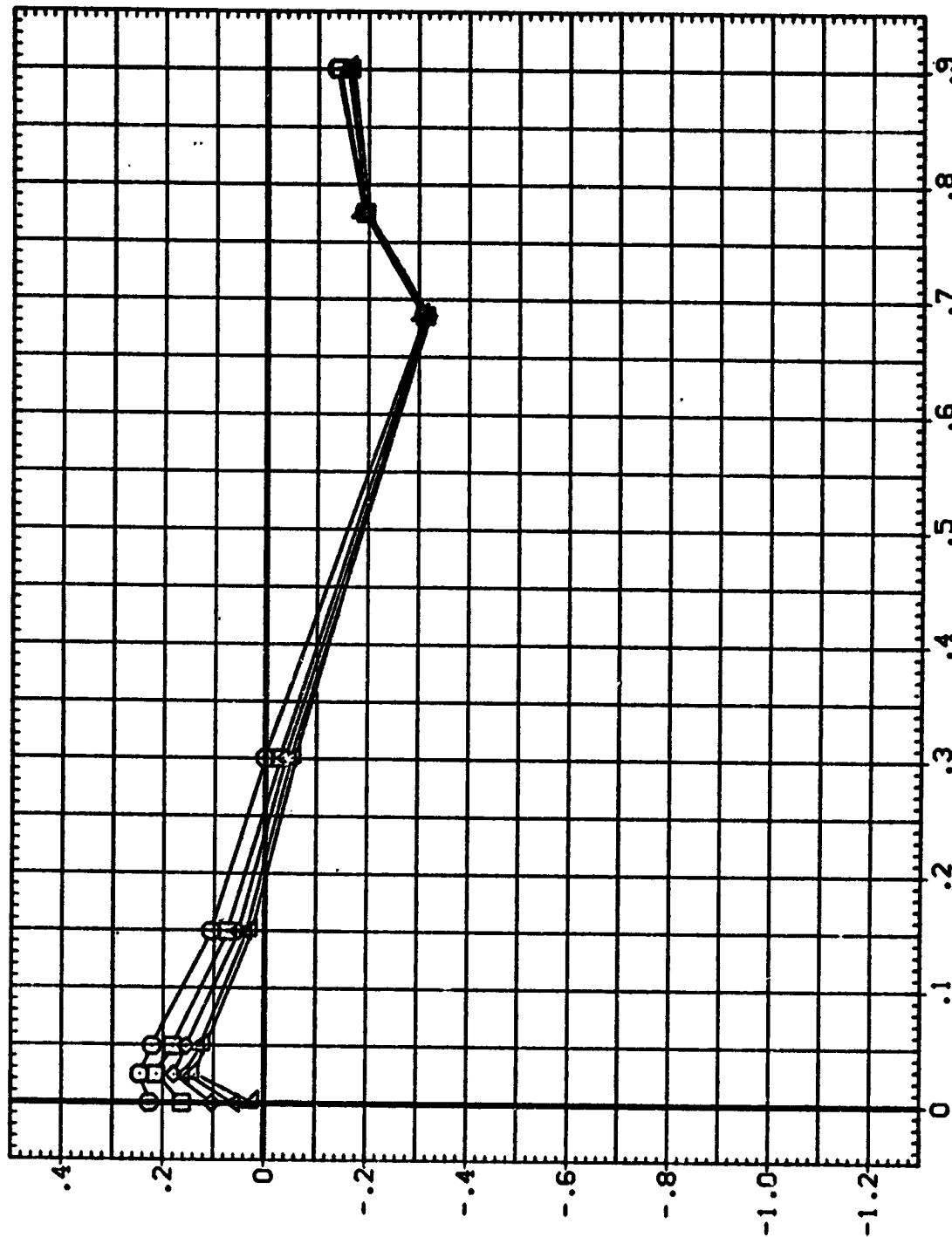


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 L-ELVN .000
 MACH .600

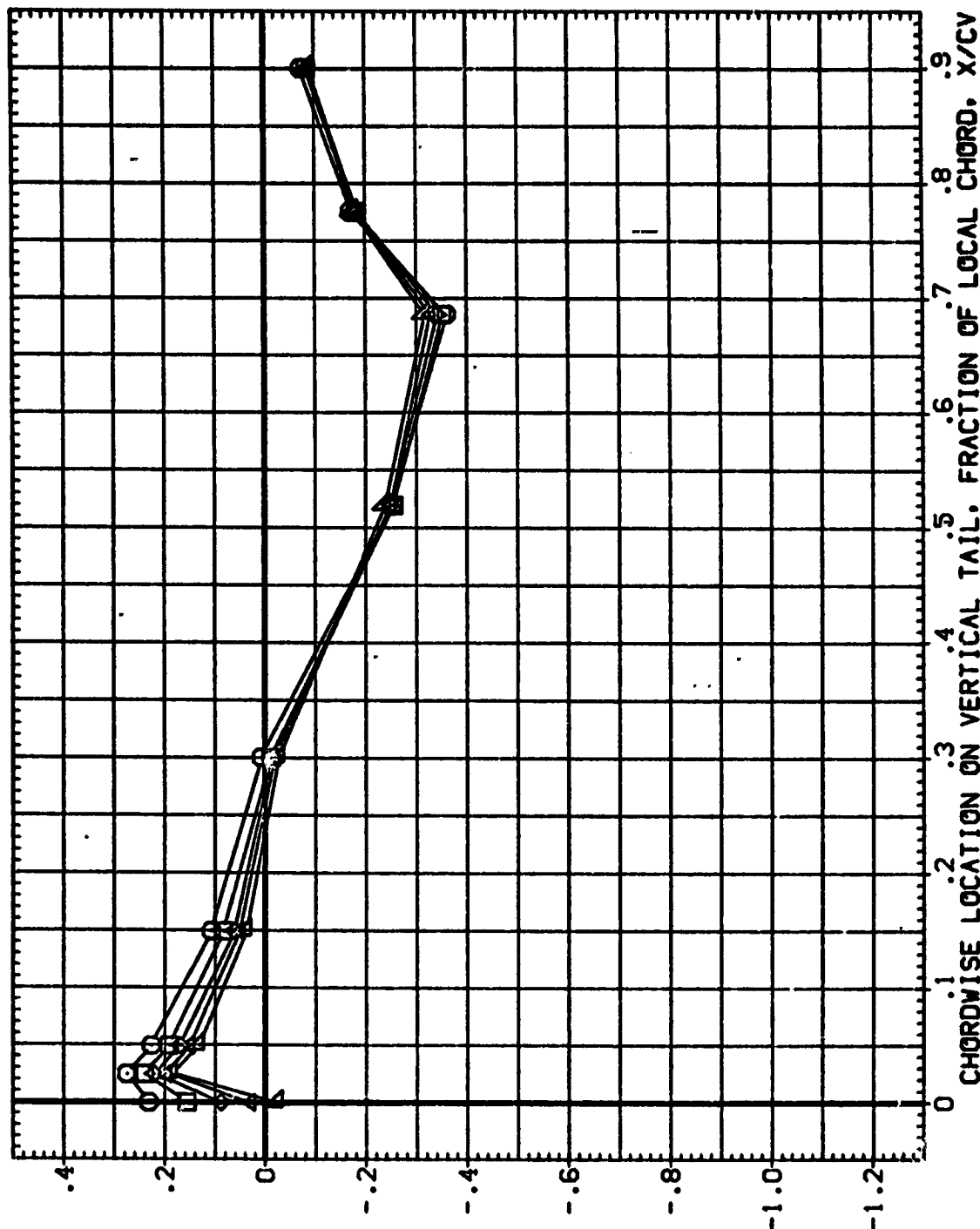


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A.48) -140A/B/C/R ORB VERTICAL

SYNOPSIS

ALPHA	Z/BV	BETA
-4.000	.940	-4.000
.000		
4.000		
8.000		
12.000		

PARAMETRIC VALUES	
RUDDER	.000
BOFLAP	.000
R-ELVN	.000
SPOBRK	.000
L-ELVN	.000
MACH	.600

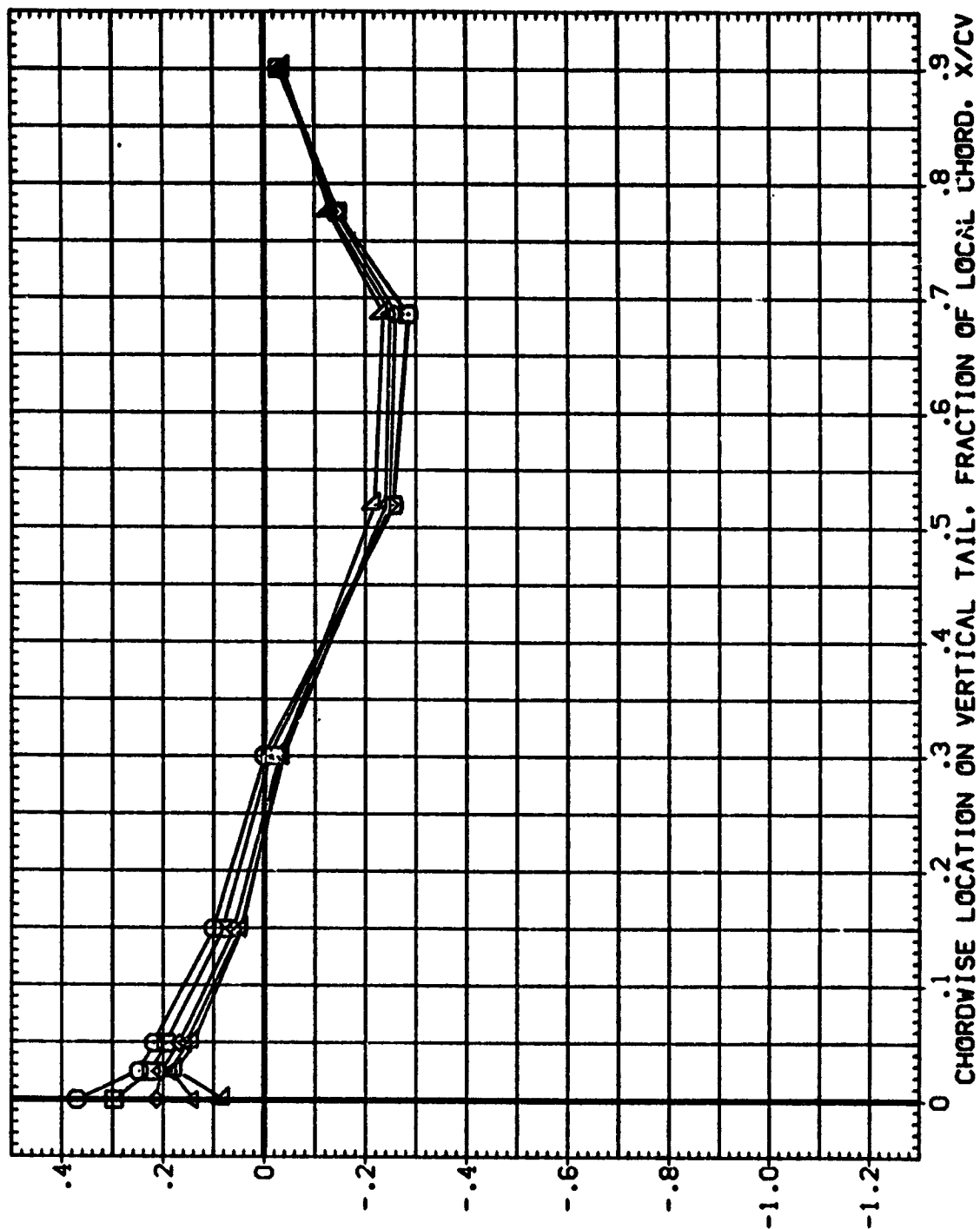


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

SYMBOL

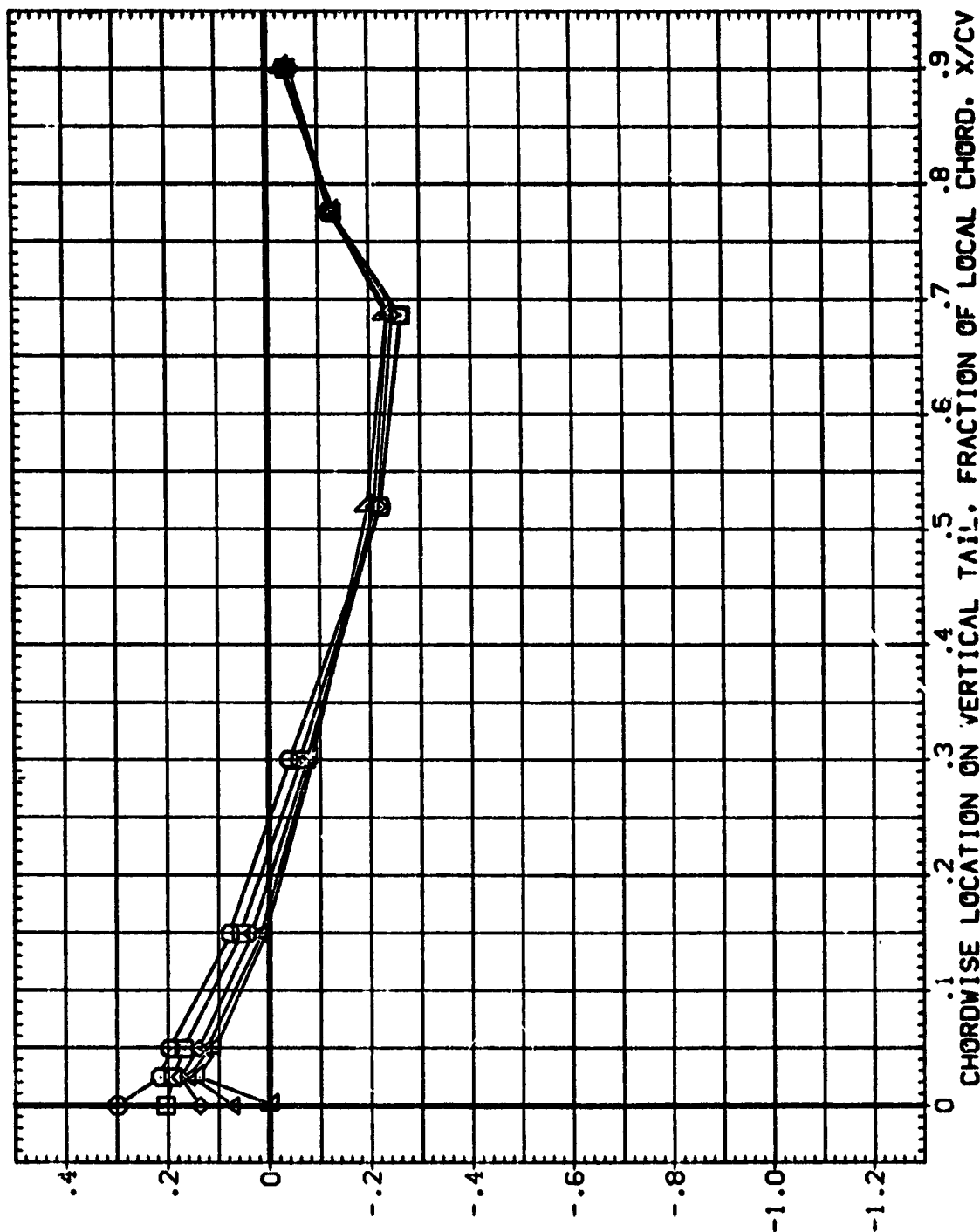
ALPHA
-4.000
.000
4.000
8.000
12.000

Z/BV BETA
.925 -4.000

RUDDER
BDFLAP
R-ELVN

PARAMETRIC VALUES
.000 .000 .000
SPDRK L-ELVN MACH

.000
.000
.600



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(GAI48) -140A/B/C/R ORB VERTICAL (IE8V27)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .316

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 L-ELVN .000
 MACH .600

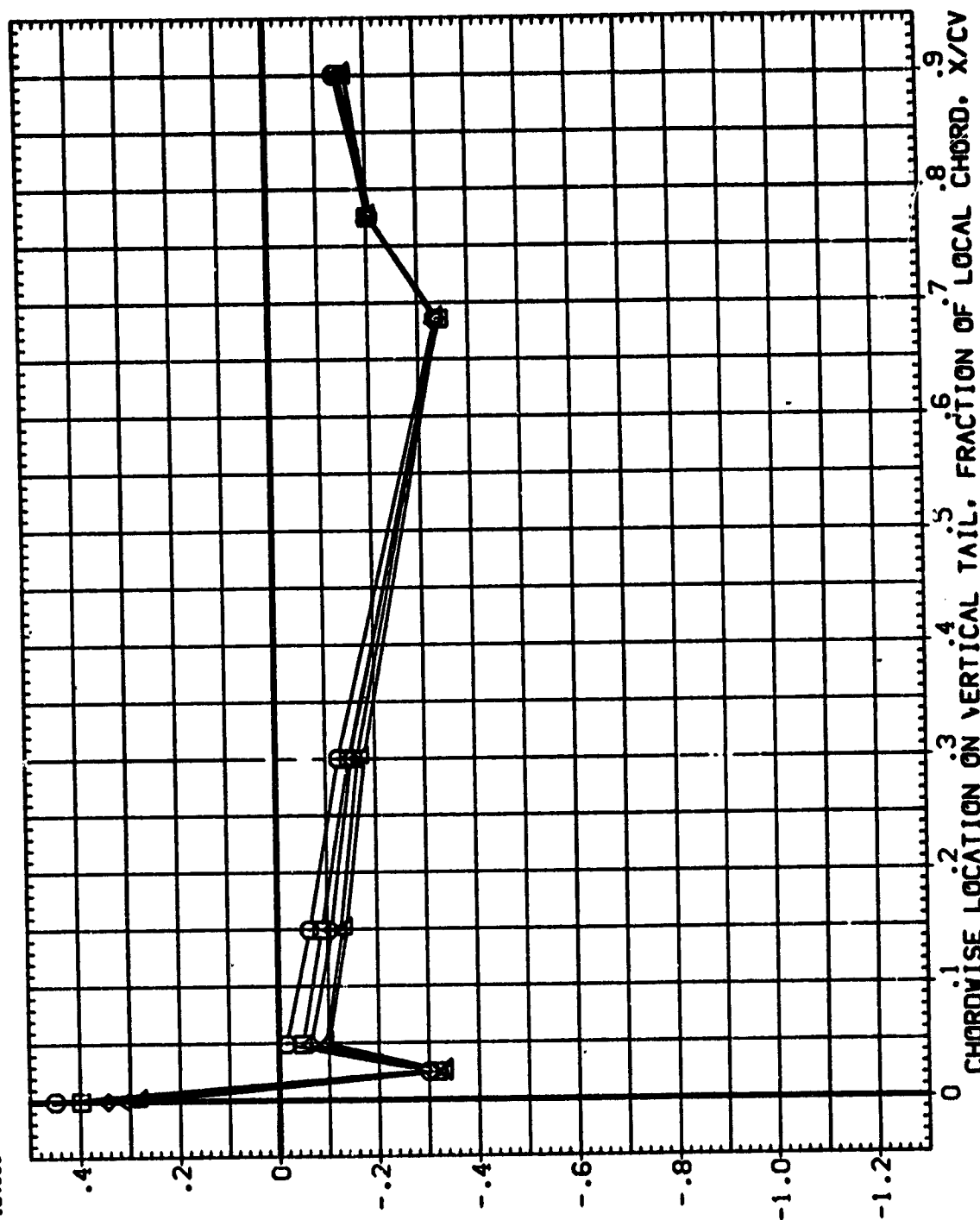


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

11

HEAVY MATE- MAKING VALUES



FIG. 13

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

SYMBOL
▽
◇
□
□

ALPHA
-4.000
.000
4.000
8.000
12.000

Z/BV .840
BETA .000

PARAMETRIC VALUES
RUDDER .000
BOFLAP .000
R-ELVN .000
L-ELVN .000
MACH .600

.000
.000
.600

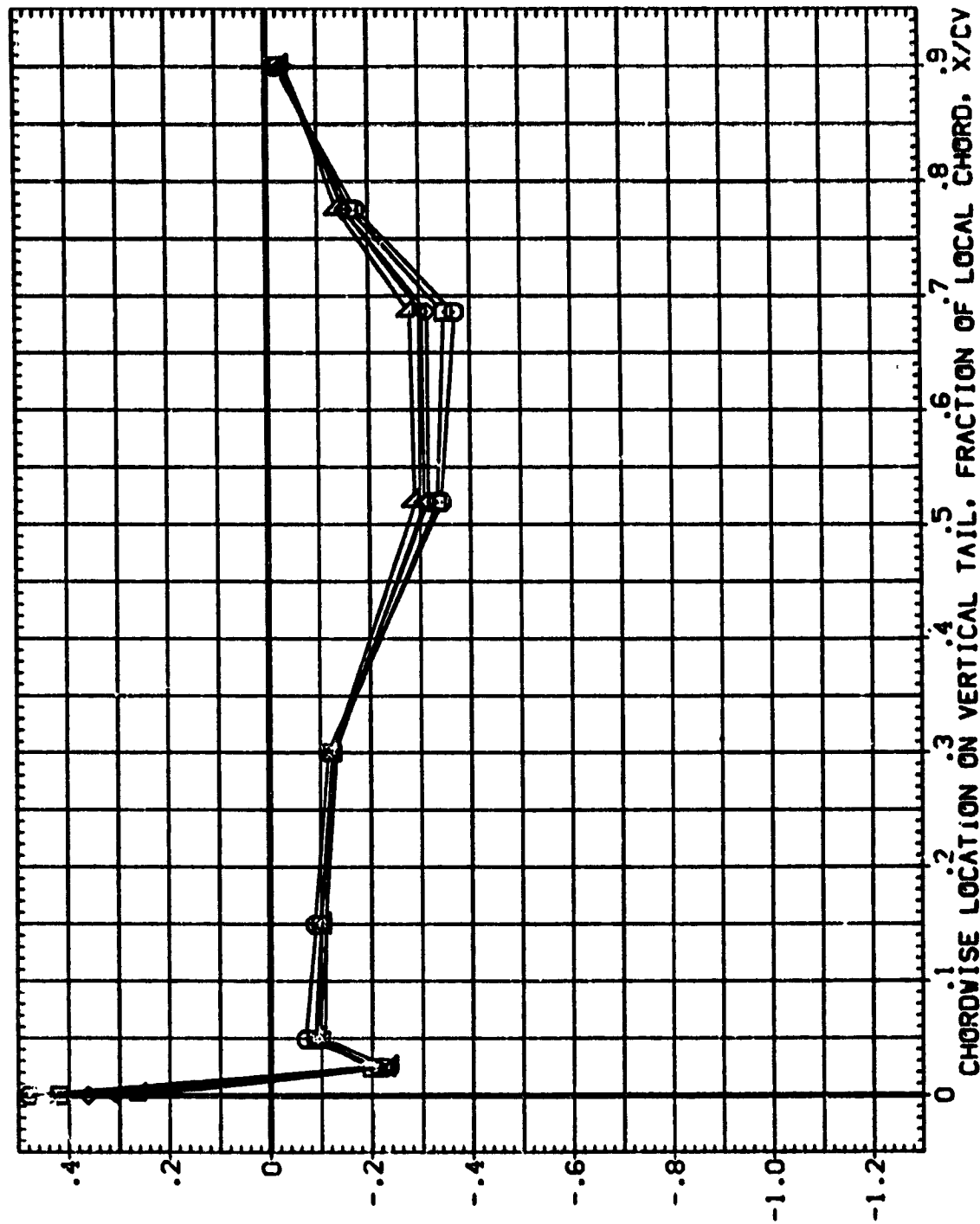


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925
 .000

BETA

PARAMETRIC VALUES
 RUDDER .000 SPEEDBRK .000
 DEFLEAP .000 L-ELVN .000
 R-ELVN .000 MACH .500

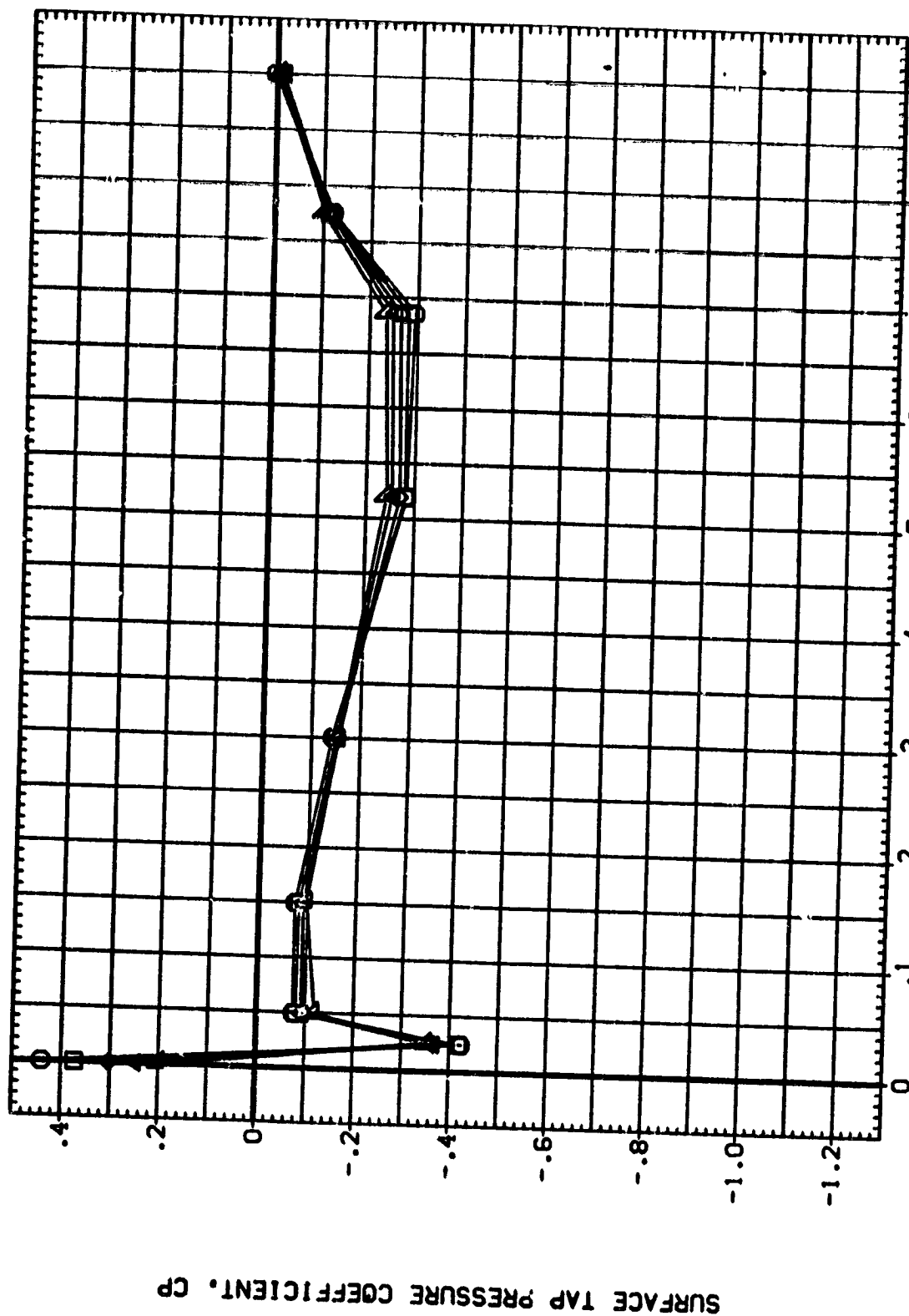


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V27)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

Z/BV
.316

BETA
4.000

PARAMETRIC VALUES
RUDDER
BOFLAP
R-ELVN

.000
.000
.000

SPDRBK
L-ELVN
MACH

.000
.000
.000

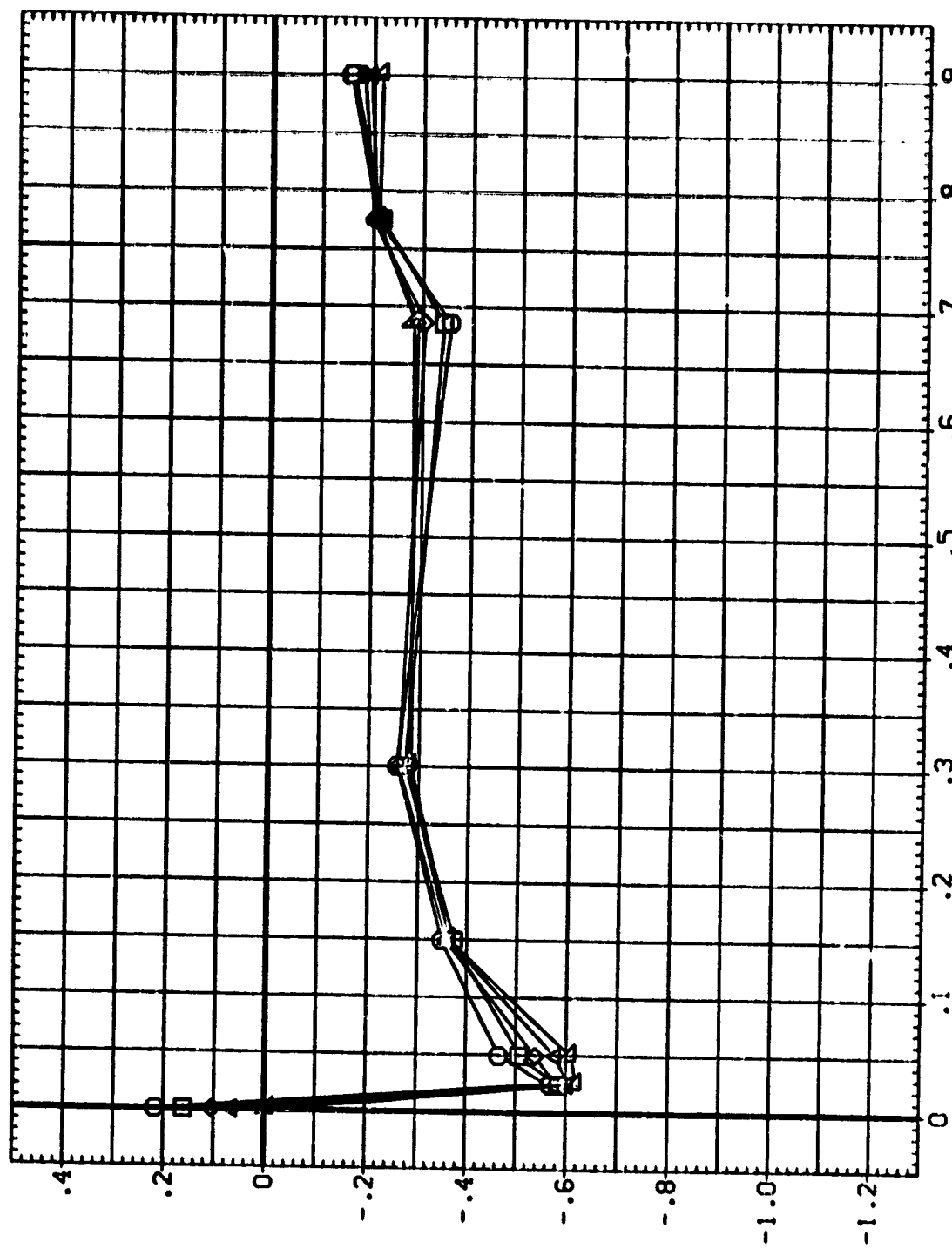


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK .000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

SURFACE TAP PRESSURE COEFFICIENT, CP

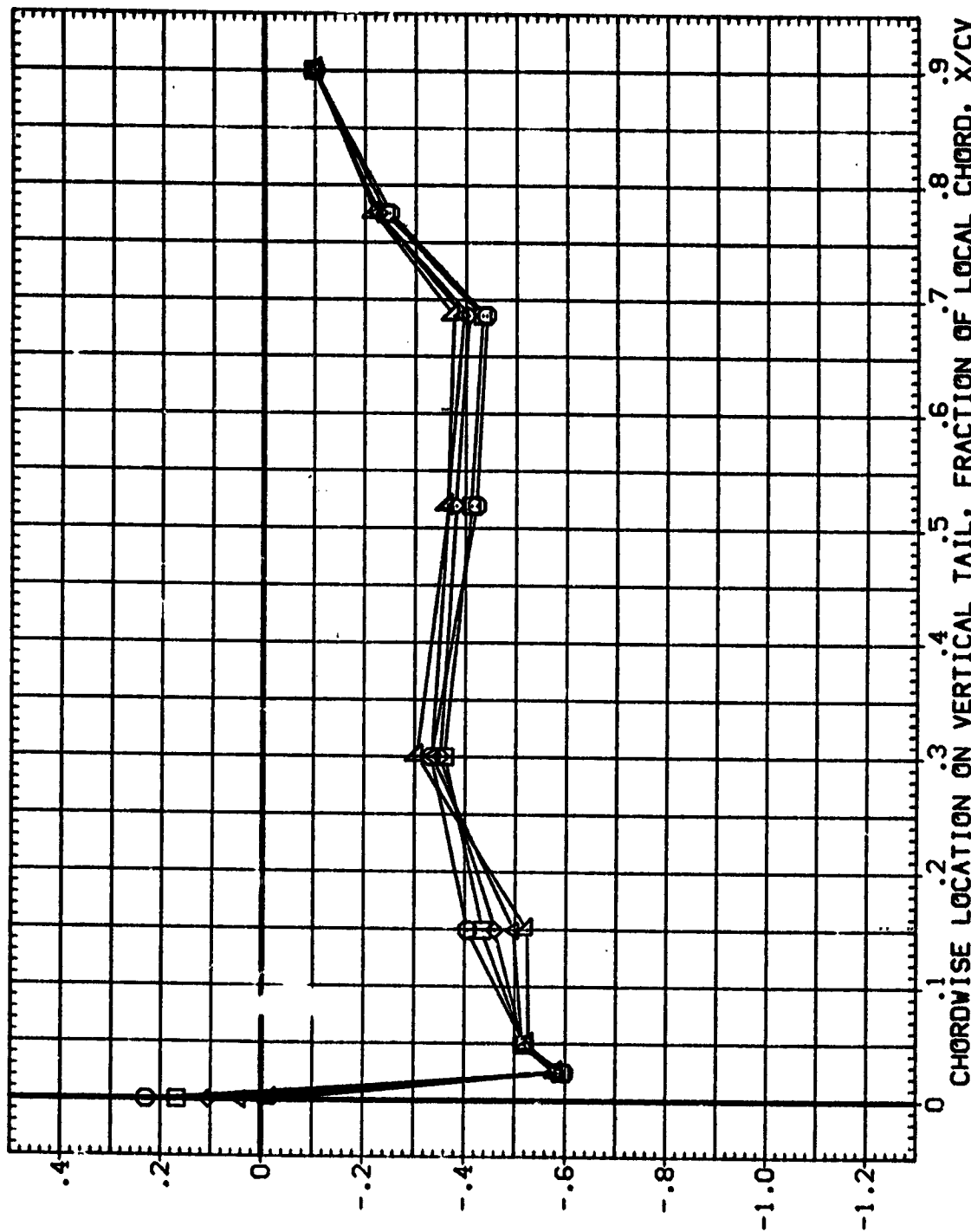


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

SYMBOL
▽
◇
□
○

ALPHA
-1.000
.000
4.000
8.000
12.000

Z/BV
.840

BETA
4.000

PARAMETRIC VALUES
RUDDER
BOFLAP
R-ELVN
.000
.000
.000
SPDBRK
L-ELVN
MACH
.000
.000
.600

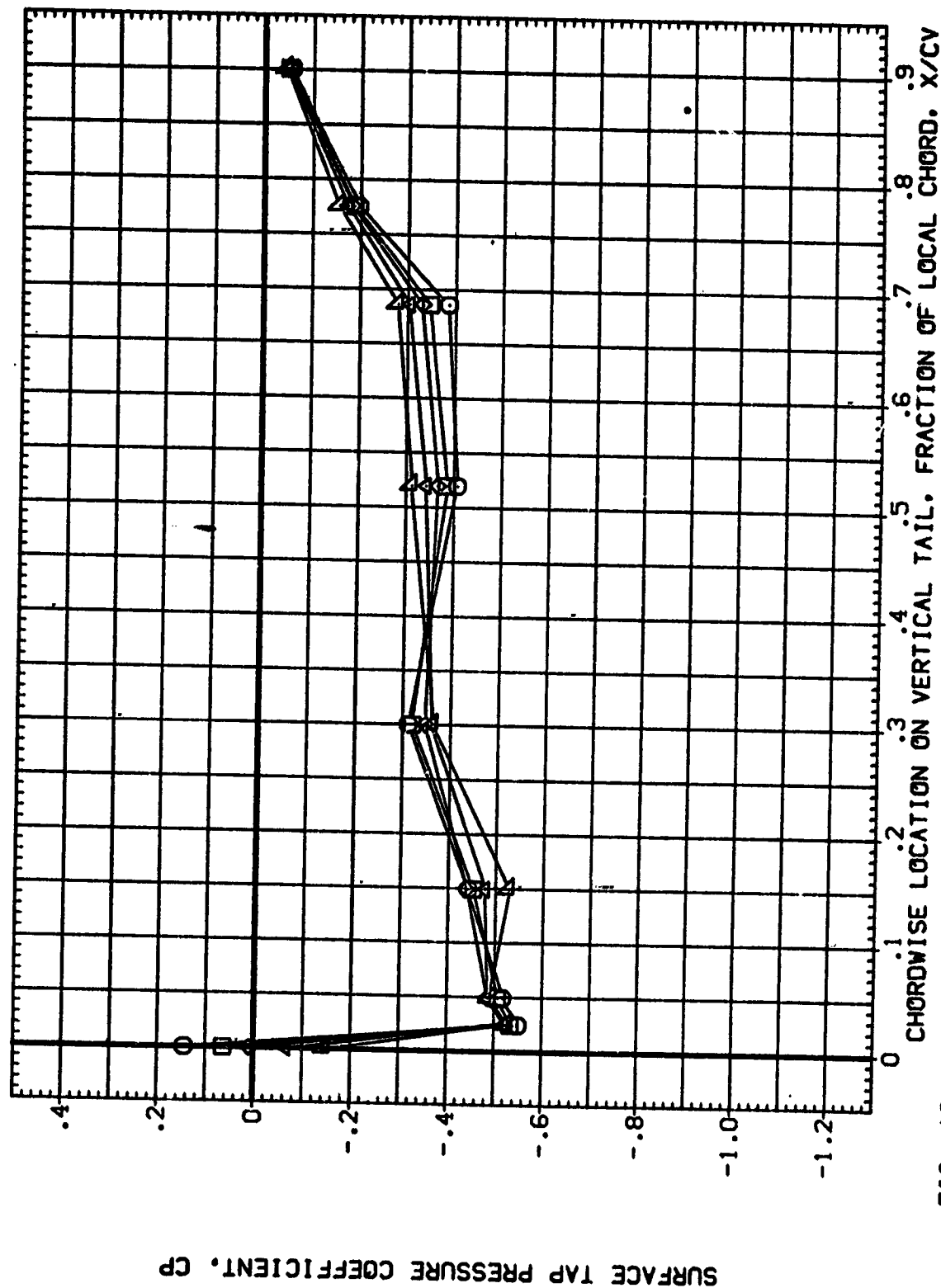


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.925	4.000	.000	SPOBRK .000
◇	.000			.000	L-ELVN .000
□	4.000			.000	MACH .500
△	8.000				
	12.000				

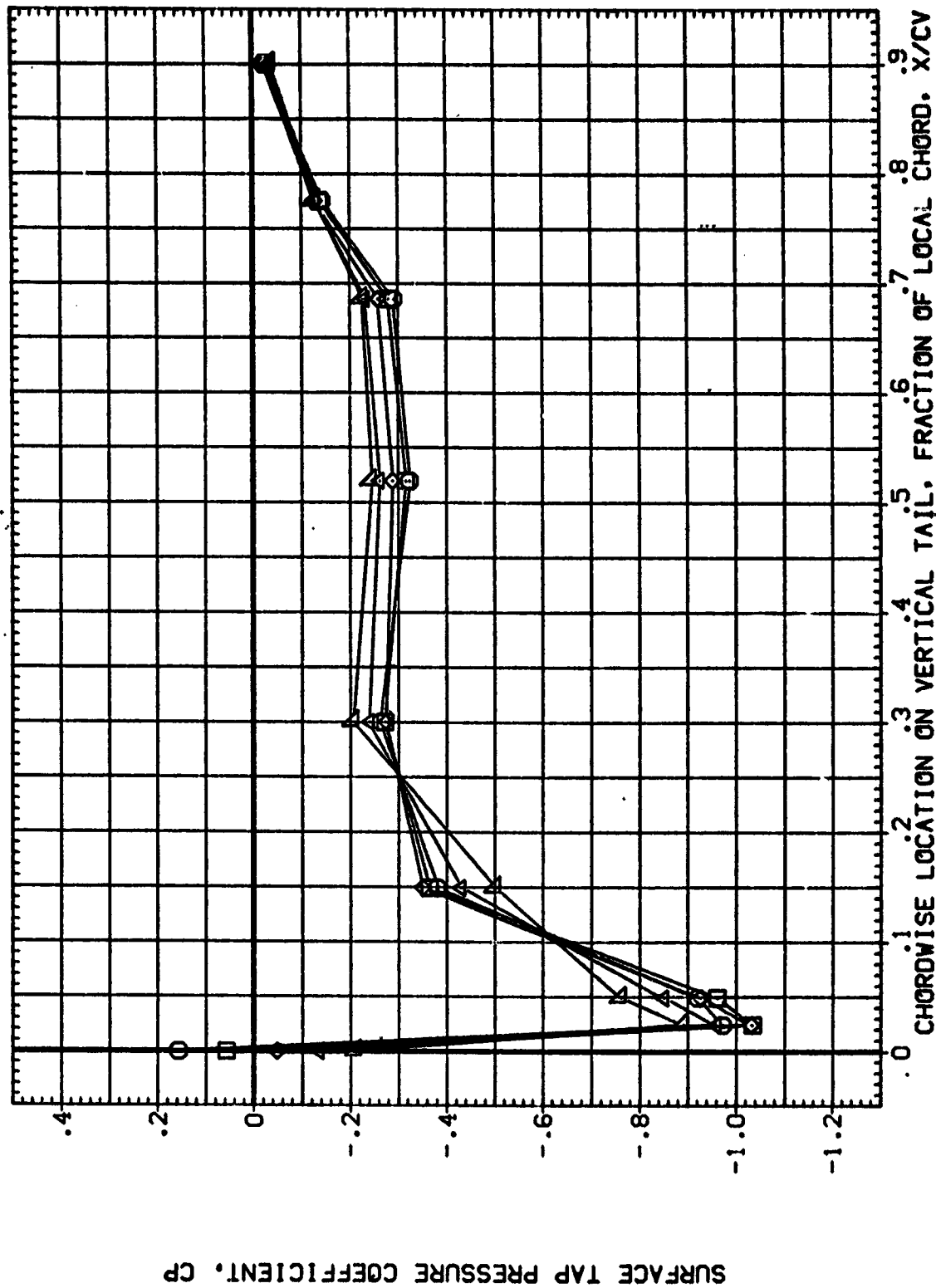


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

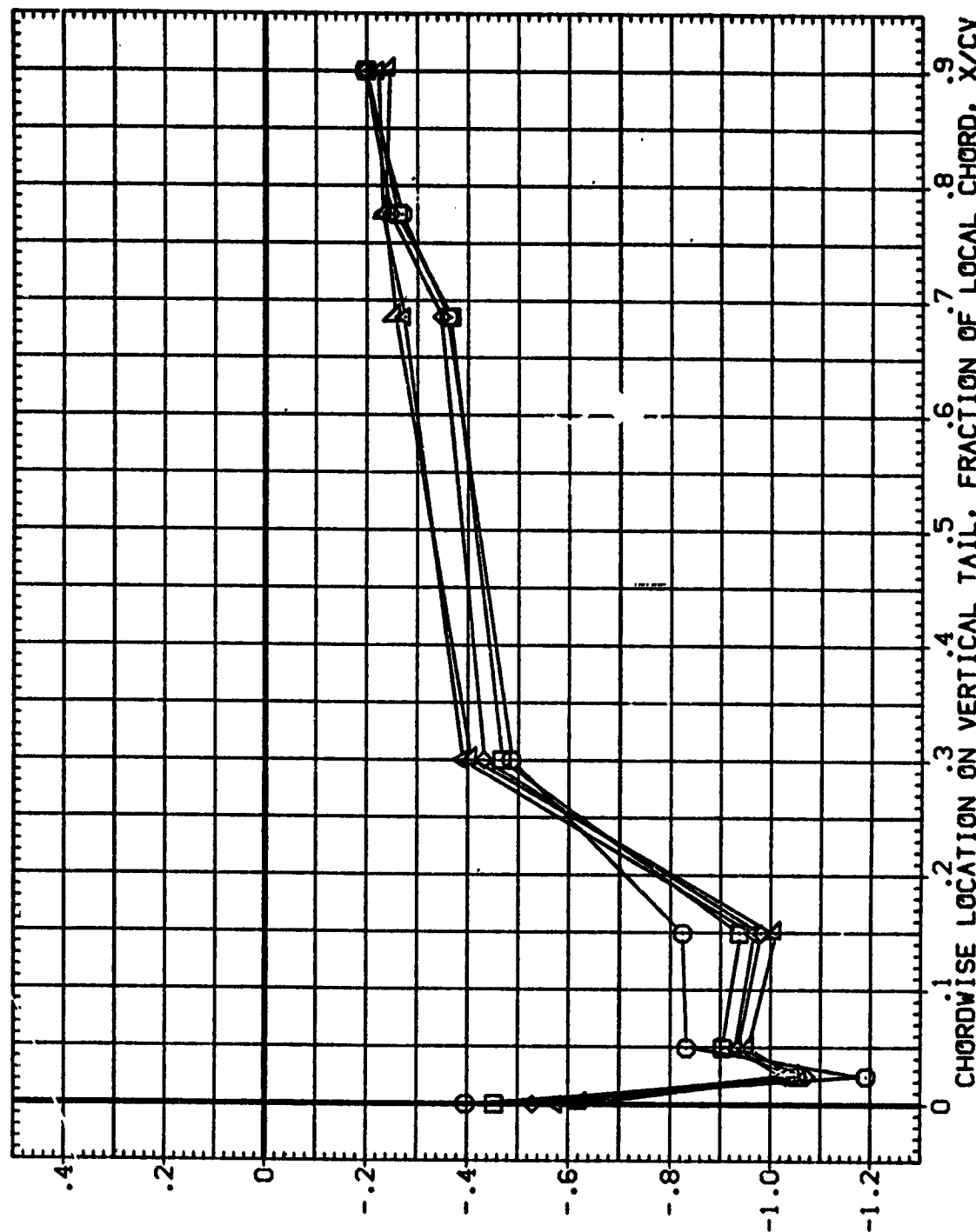
SYMBOL
 ▽ □ ◇ ◊ ◻

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .316

BETA 8.000

PARAMETRIC VALUES
 RUDDER .000
 BDFLAP .000
 R-ELVN .000
 SPDBRK .000
 L-ELVN .000
 MACH .600

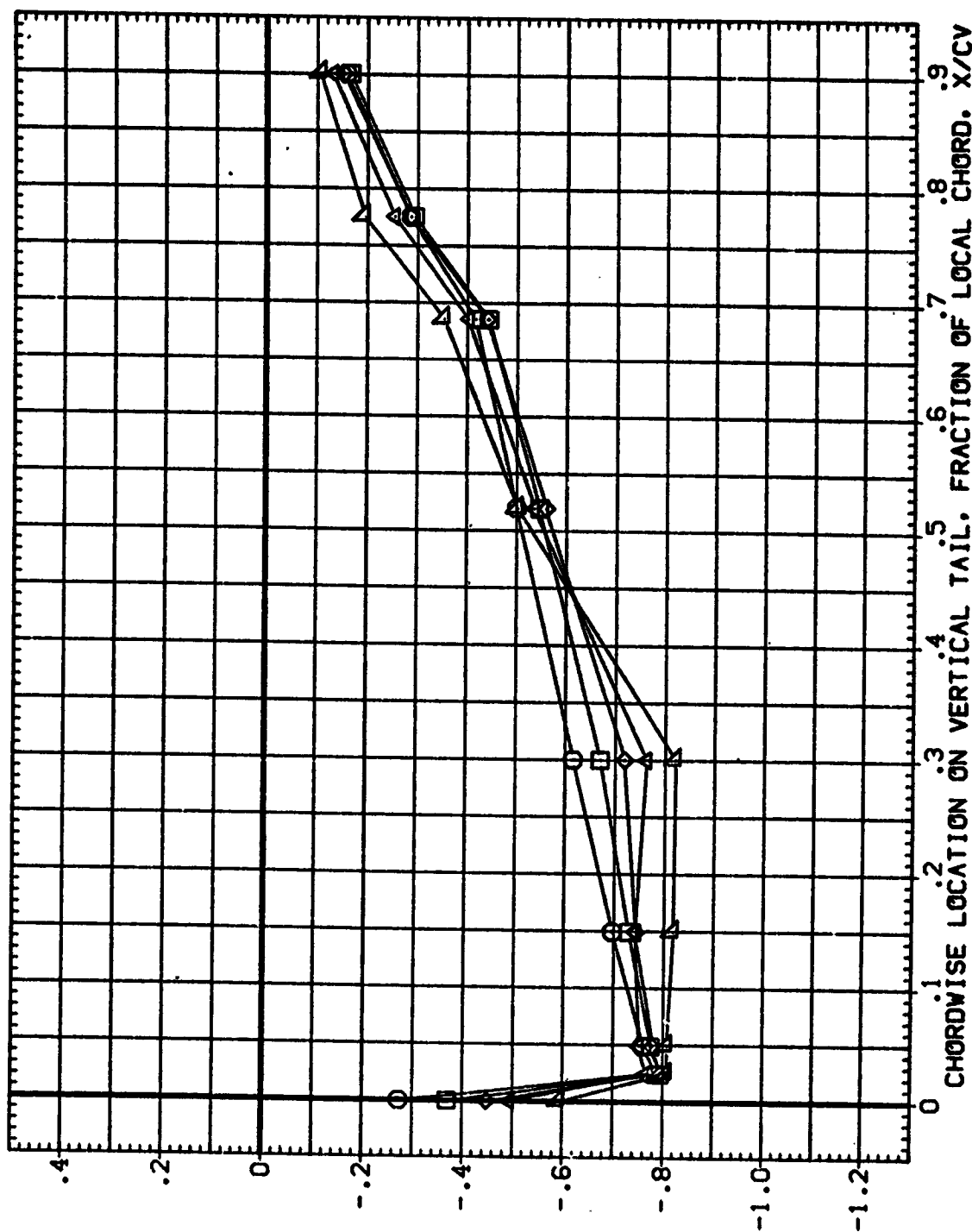


SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V27)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.600	8.000	BOFLAP	.000 SPDBRK
□	.000			R-ELVN	.000 L-ELVN
◇	4.000				.000 MACH
△	8.000				.600
▽	12.000				



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0/148) -140A/B/C/R ORB VERTICAL

(IE8V27)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .840

BETA 8.000

PARAMETRIC VALUES
 RUDDER .000
 SPOBRK .000
 BOFLAP .000
 L-ELVN .000
 R-ELVN .000
 MACH .600

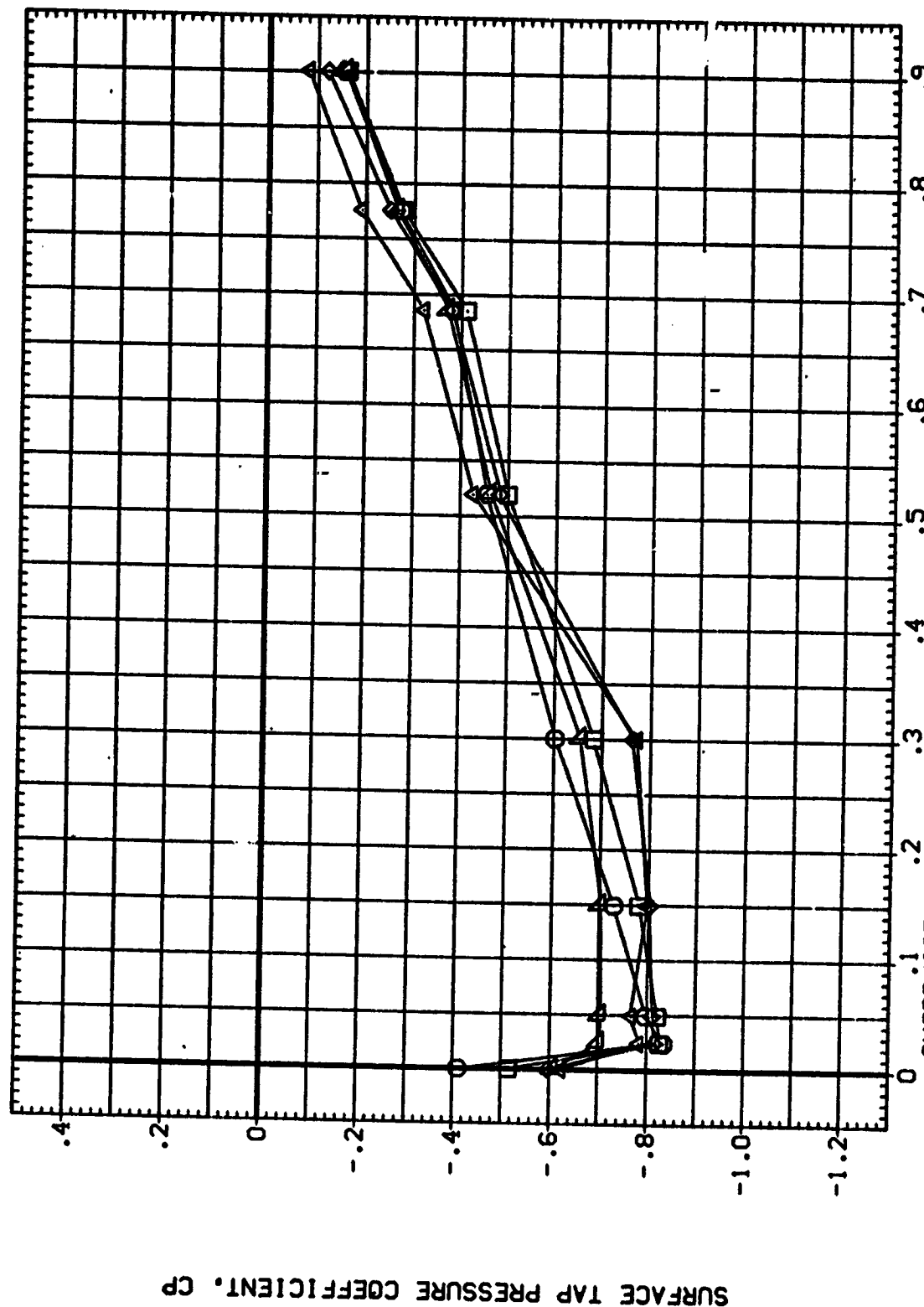


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925

BETA
 8.000

PARAMETRIC VALUES

RUDDER
 .000

BOFLAP
 .000

R-ELVN
 .000

SPOBRK
 .000

L-ELVN
 .000

MACH
 .600

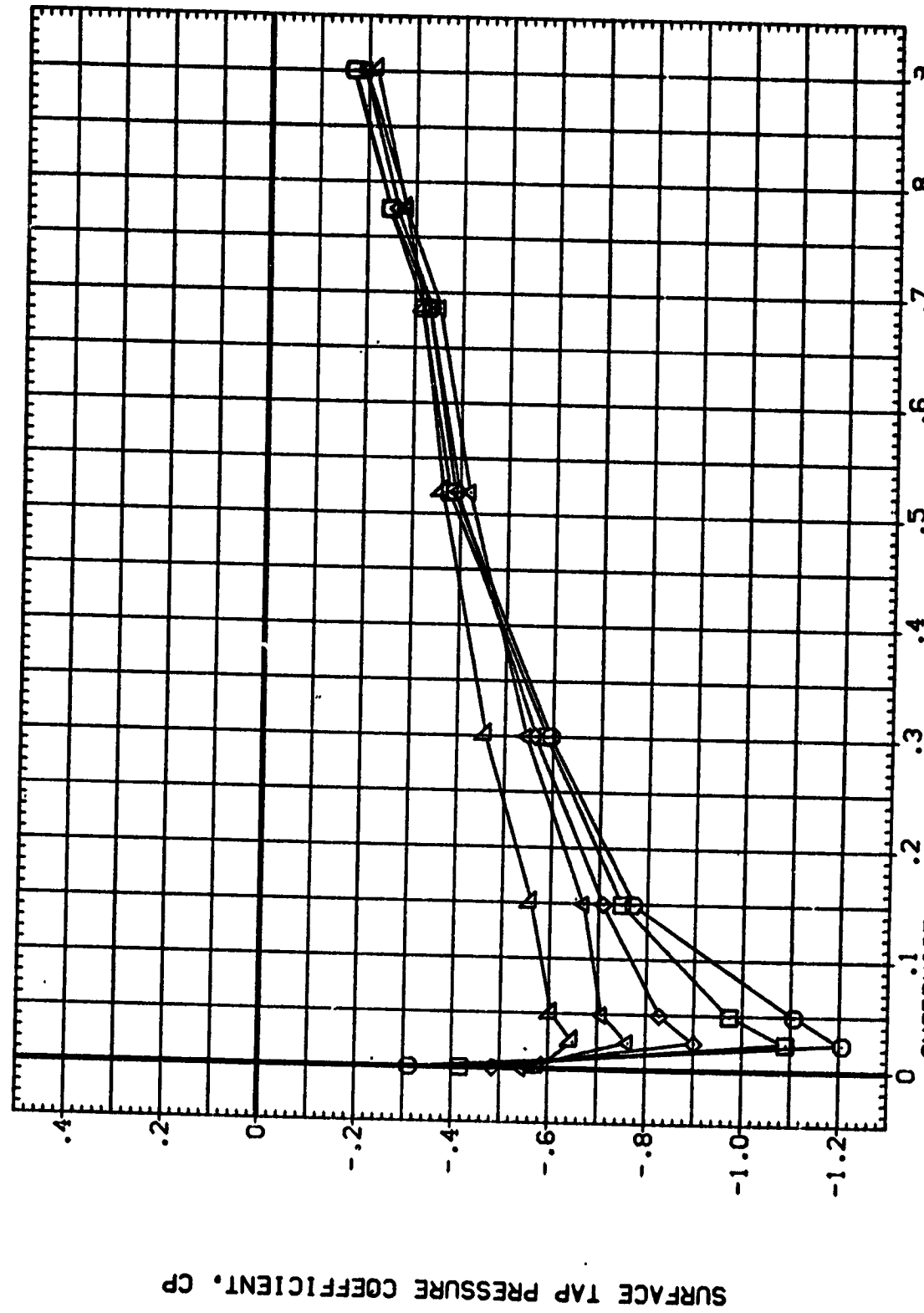


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(CA148) -14CA/B/C/R ORB VERTICAL (IE8V26)

SYMBOL
 ▽
 ◇
 □
 □
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .316

BETA -4.000

PARAMETRIC VALUES
 RUDDER .000
 SPEEDBRAK .000
 BOFLAP .000
 R-ELVN .000
 L-ELVN .000
 MACH .900

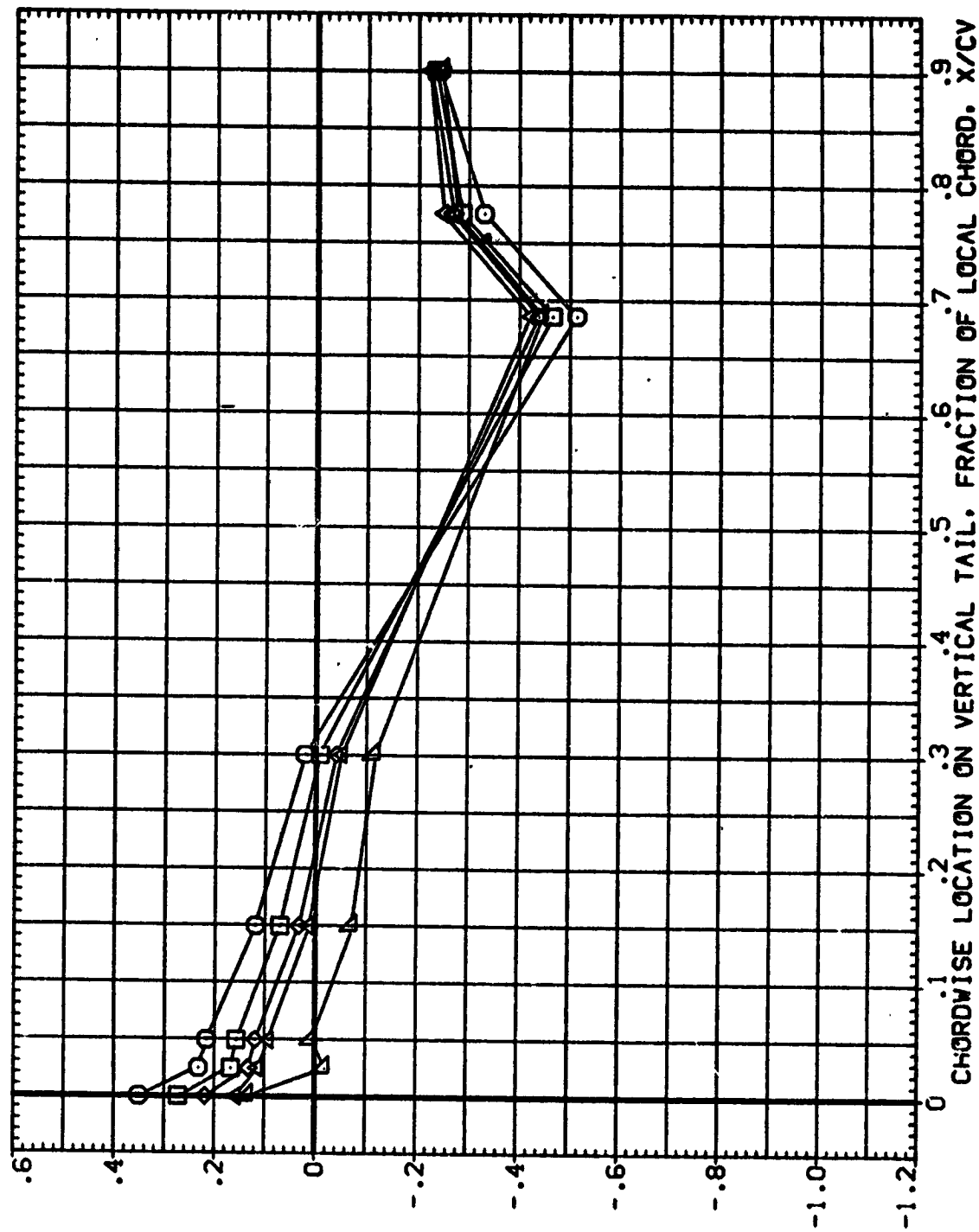


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

(92A831)

BETA
-4.000

000



(1E8V26)

700

ALPHA	Z/BV	BETA
-4.000	.840	-4.000
.000		
4.000		
8.000		
12.000		

PARAMETRIC VALUES	
RUDDER	.000
80FLAP	.000
R-ELVN	.000
MACH	.900

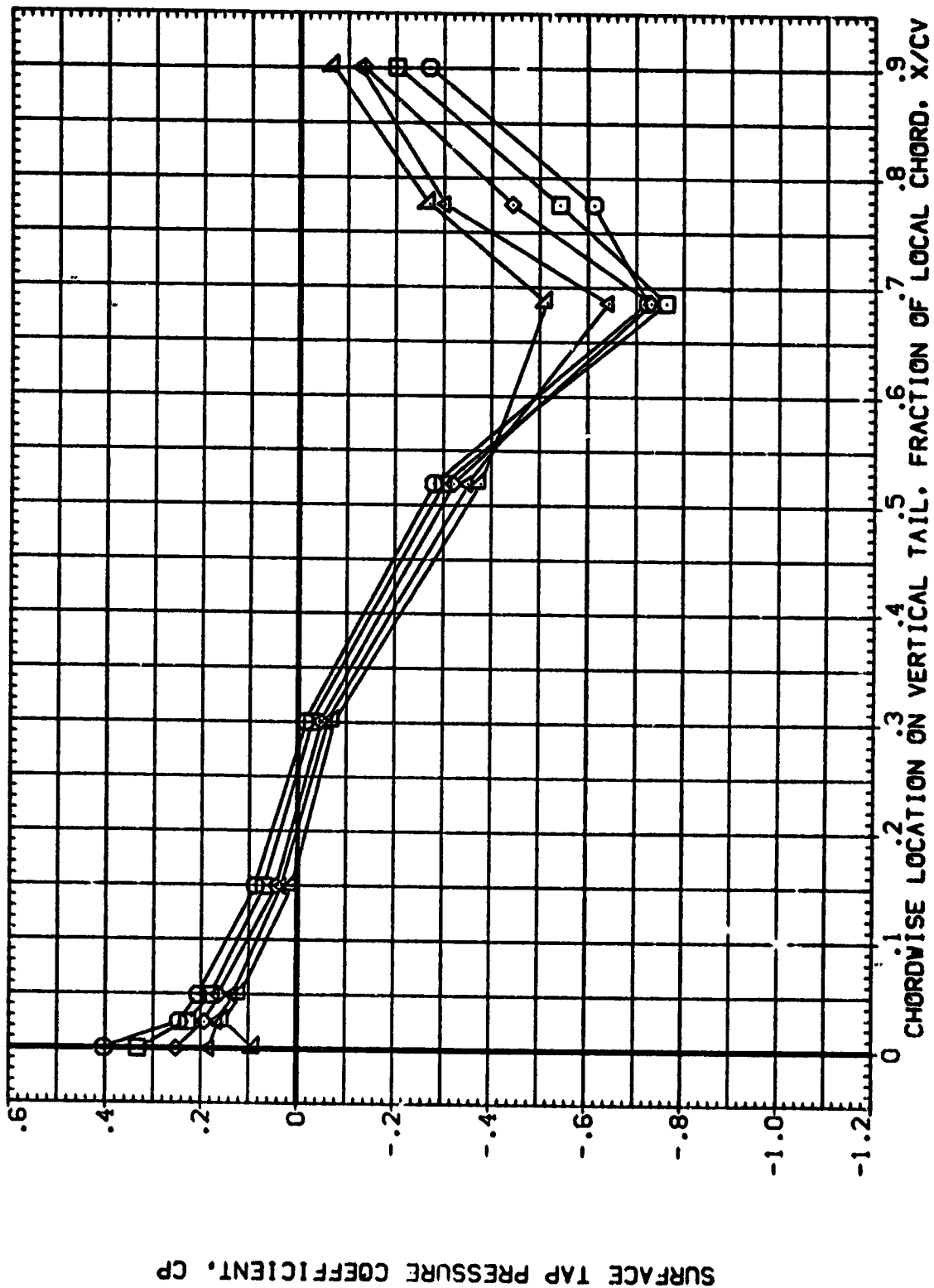


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 .000 SPOBRK
 .000 L-ELVN
 .000 NACH

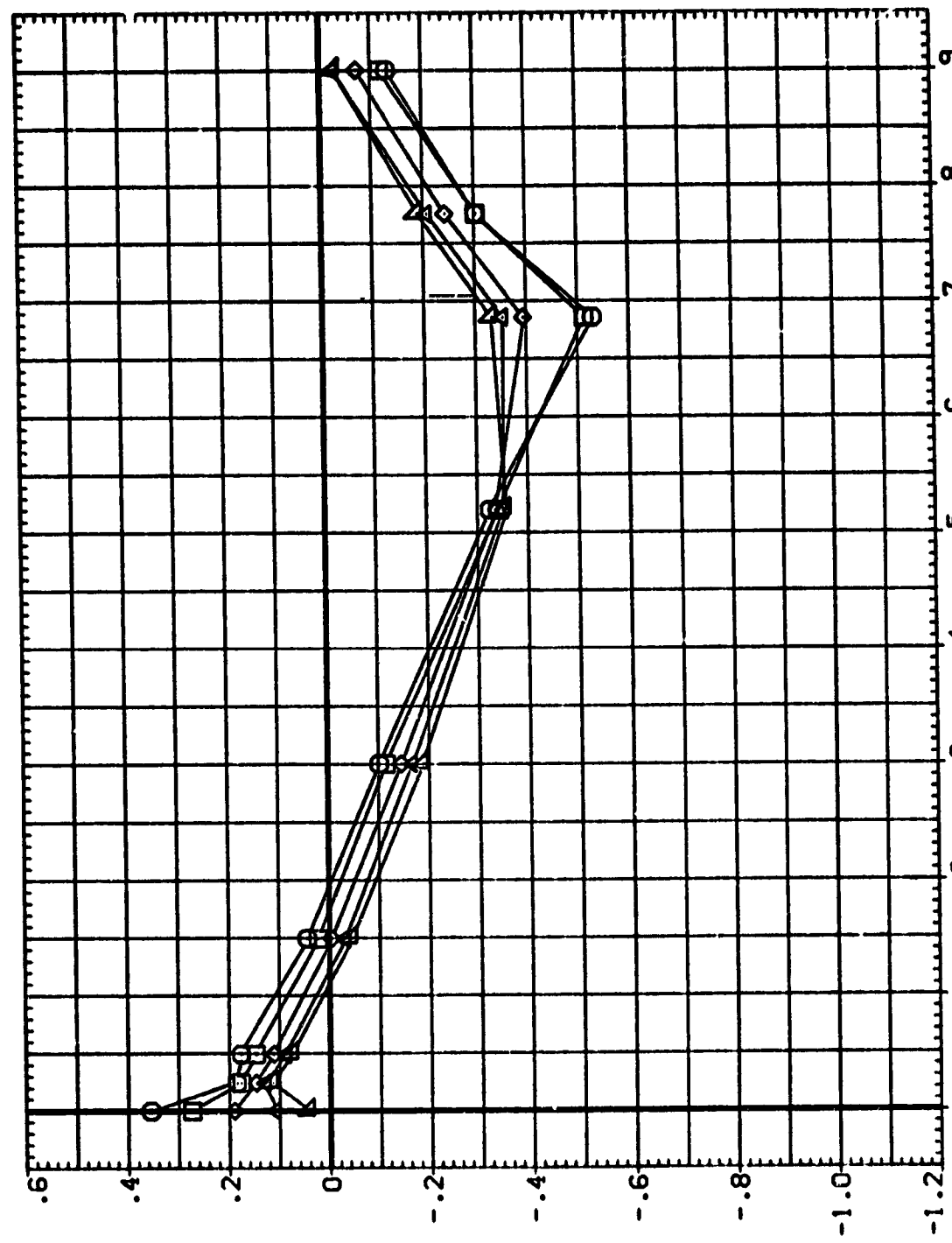
RUDDER
 BOFLAP
 R-ELVN

Z/BV
 .925

BETA
 -4.000

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ▽



SURFACE TAP PRESSURE COEFFICIENT, CP

0 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(GA148) -140A/B/C/R ORB VERTICAL (1E8V26)

SYMBOL	ALPHA	Z/BV	BETA	RUDER	PARAMETRIC VALUES
▽	-4.000	.316	.000	BOFLAP	.000 SPDBRK
◇	.000			R-ELVN	.000 L-ELVN
□	4.000				.000 MACH
△	8.000				.500
▽	12.000				

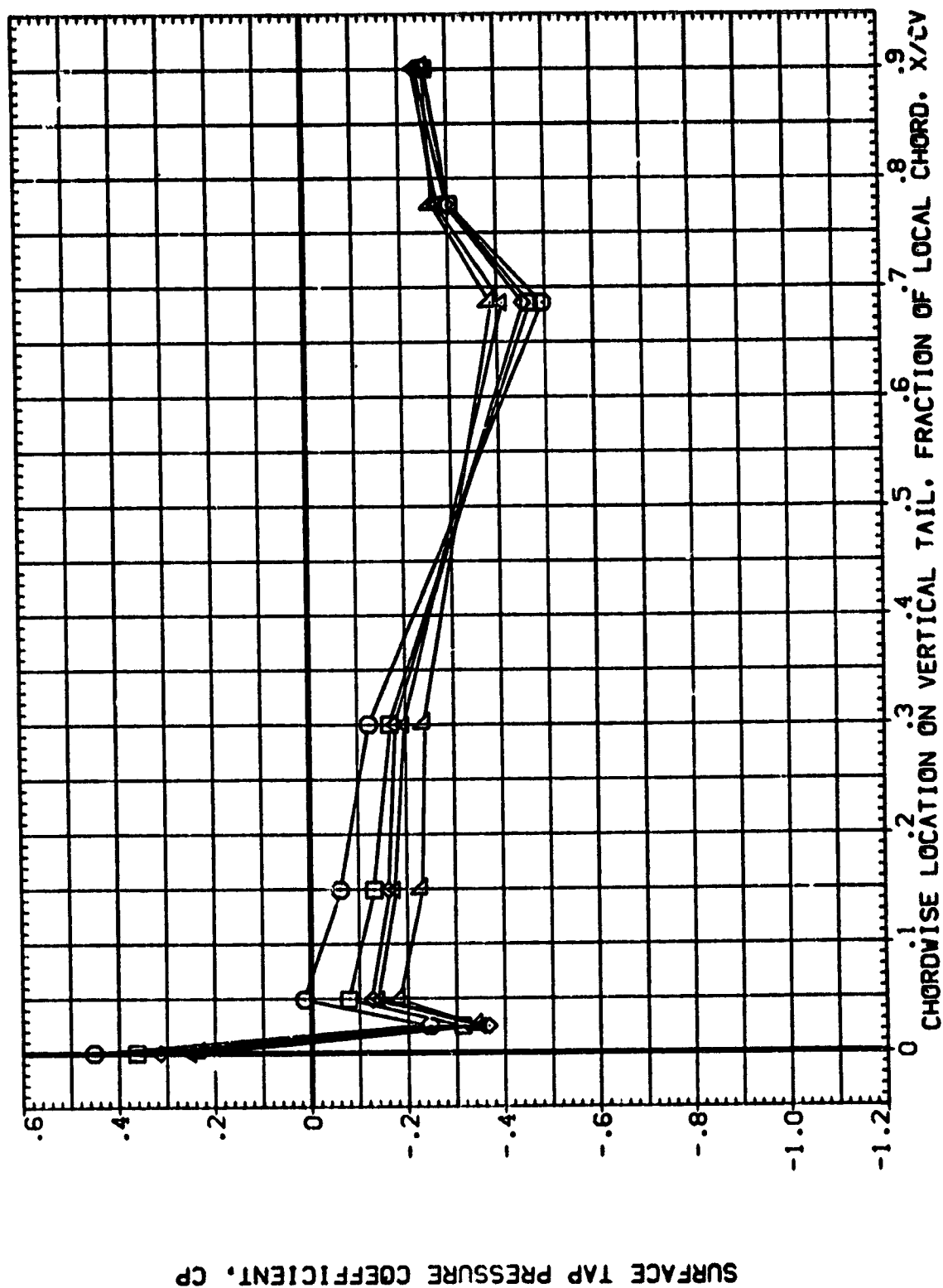


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

(1E8V26)

PARAMETRIC VALUES

HQVN	003
NA73-7	000
SPDRX	000



FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A149) -140A/B/C/R ORB VERTICAL

(1E8V26)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

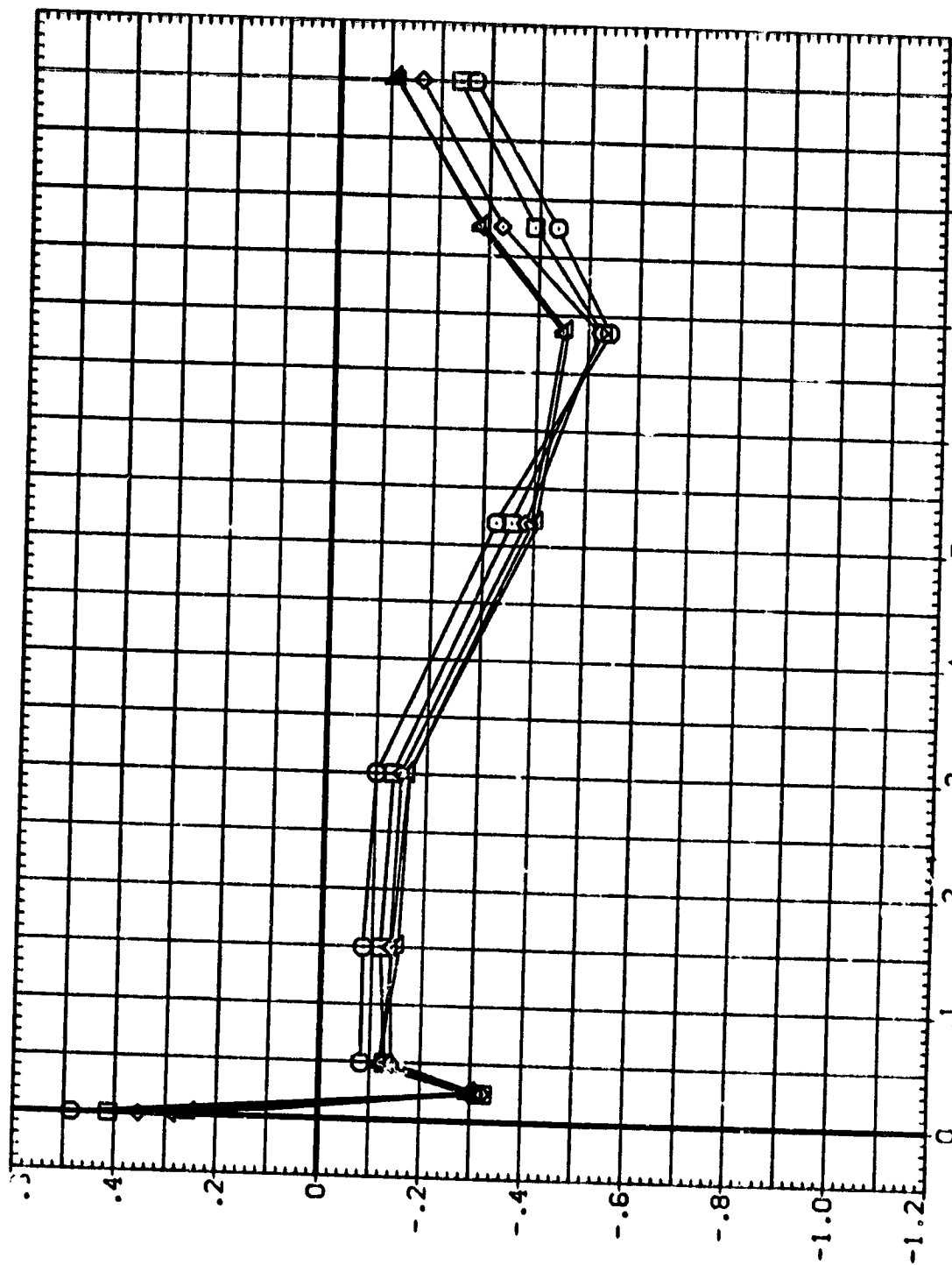
Z/BV
 .840

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

.000
 .000
 .000

.000
 .000
 .900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

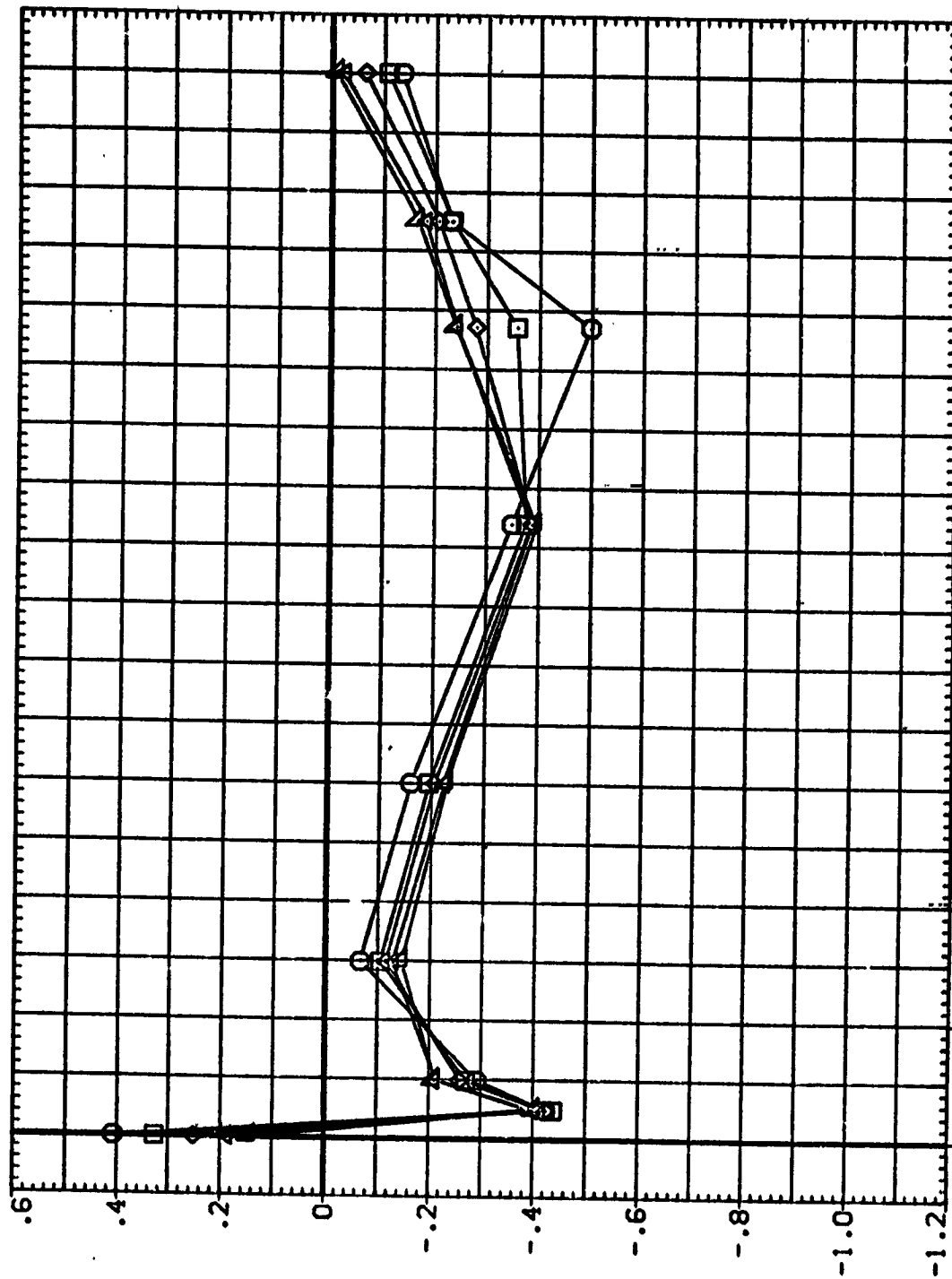
SYMBOL
 -4.000
 .000
 4.000
 8.000
 12.000

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925
 .000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 SPDBRK
 .000 L-ELVN
 .000 MACH
 .900



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

AMES 11-072(0A148) -140A/B/C/R ORB VERTICAL

(1E8V26)

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

Z/BV .316

BETA 4.000

PARAMETRIC VALUES
RUDDER .000 SPOBRK .000
BOFLAP .000 L-ELVN .000
R-ELVN .000 MACH .900

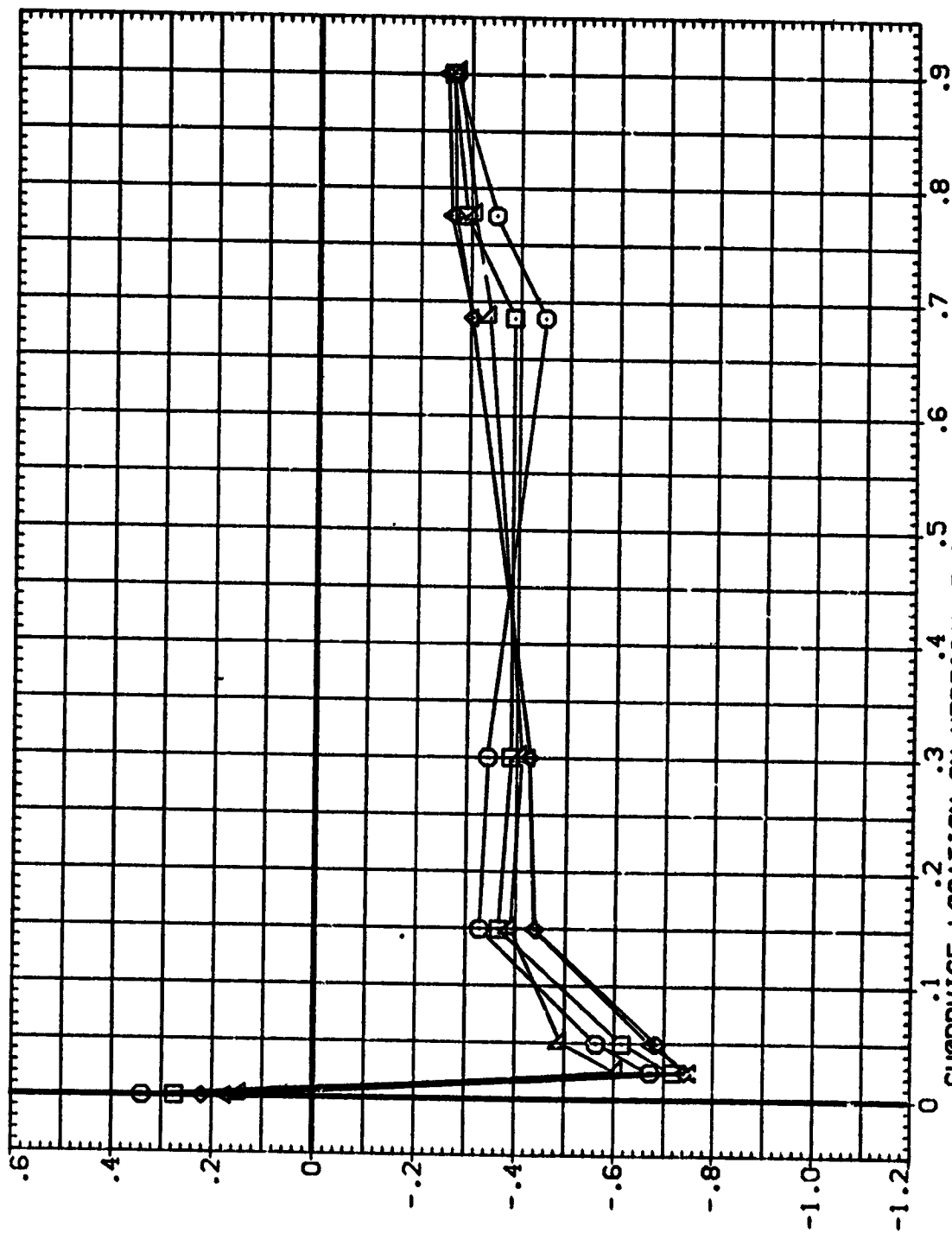


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V26)

SYMBOL
 ∇ \diamond \square \circ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV BETA
 .600 4.000

RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 .000 .000 .000
 SPDBRK L-ELVN MACH
 .000 .000 .900

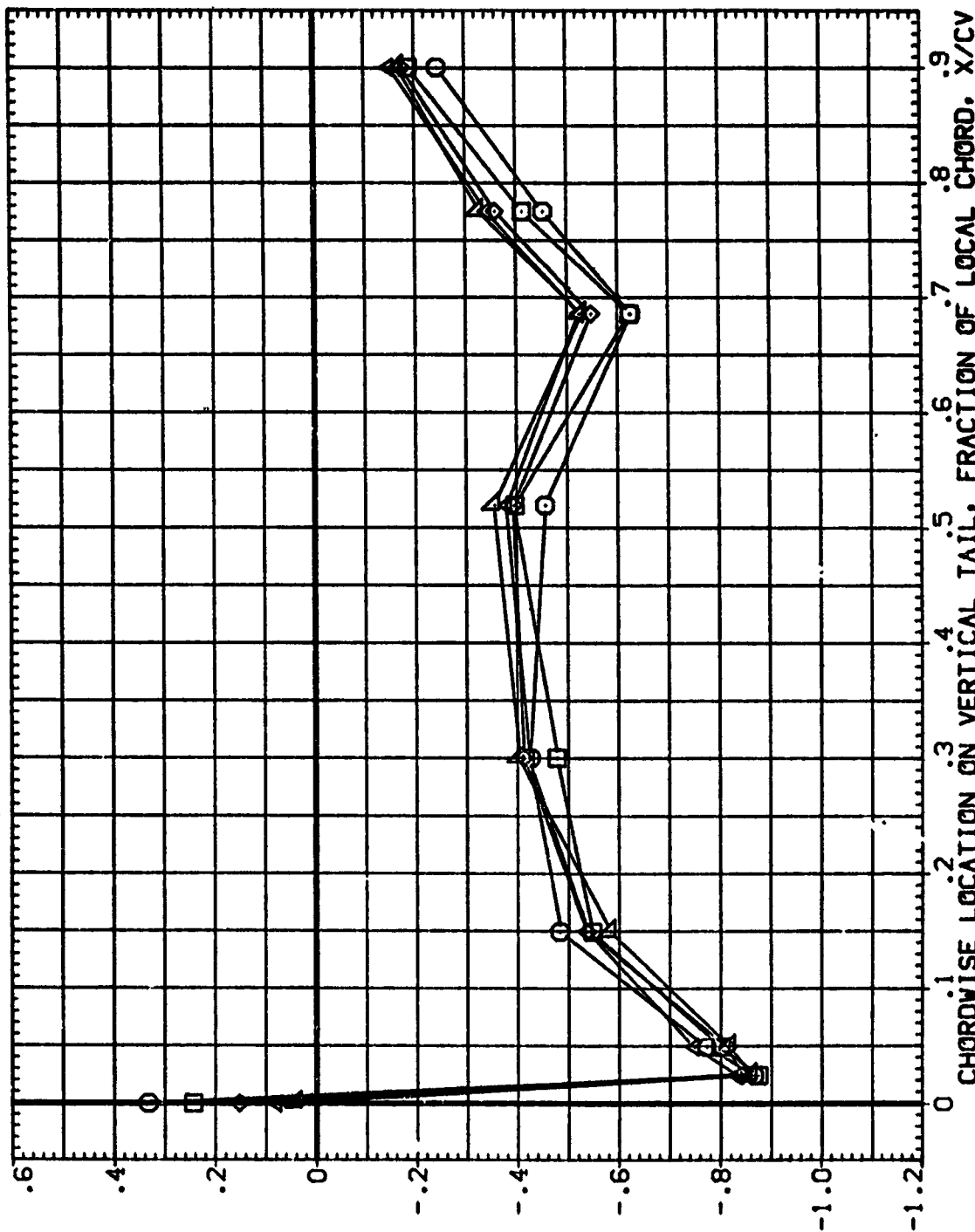


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

ANES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V26)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.840	4.000	BOFLAP	.000 SPOBRK
□	.000			R-ELVN	.000 L-ELVN
◇	4.000				.000 MACH
△	8.000				.900
▽	12.000				

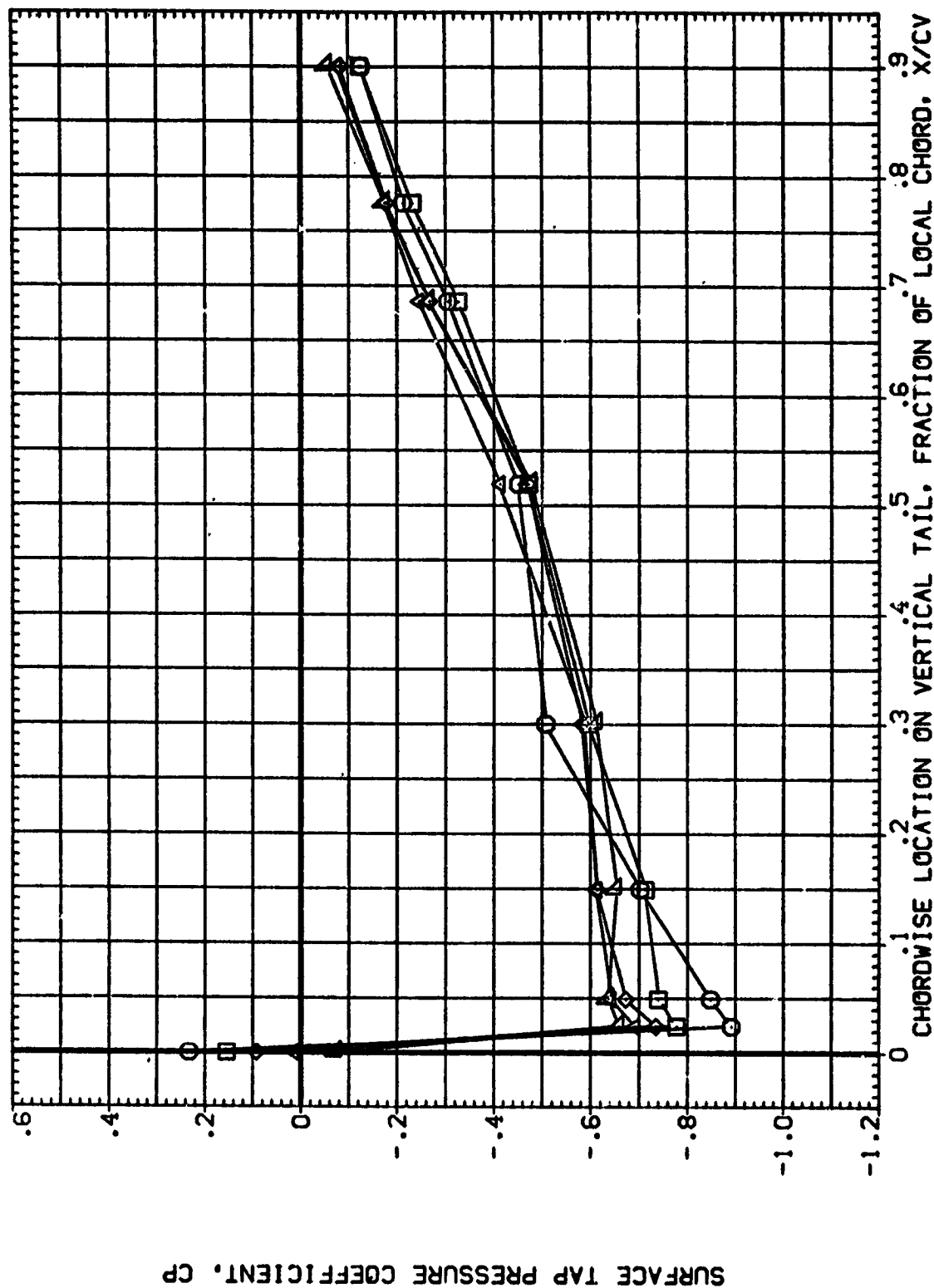


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL
▽
◇
□
○

ALPHA
-4.000
.000
4.000
8.000
12.000

Z/BV
.925

BETA
4.000

PARAMETRIC VALUES
RUDDER
BD-FLAP
R-ELVN
SPDRBK
.000
.000
.000
L-ELVN
MACH
.000
.000
.900

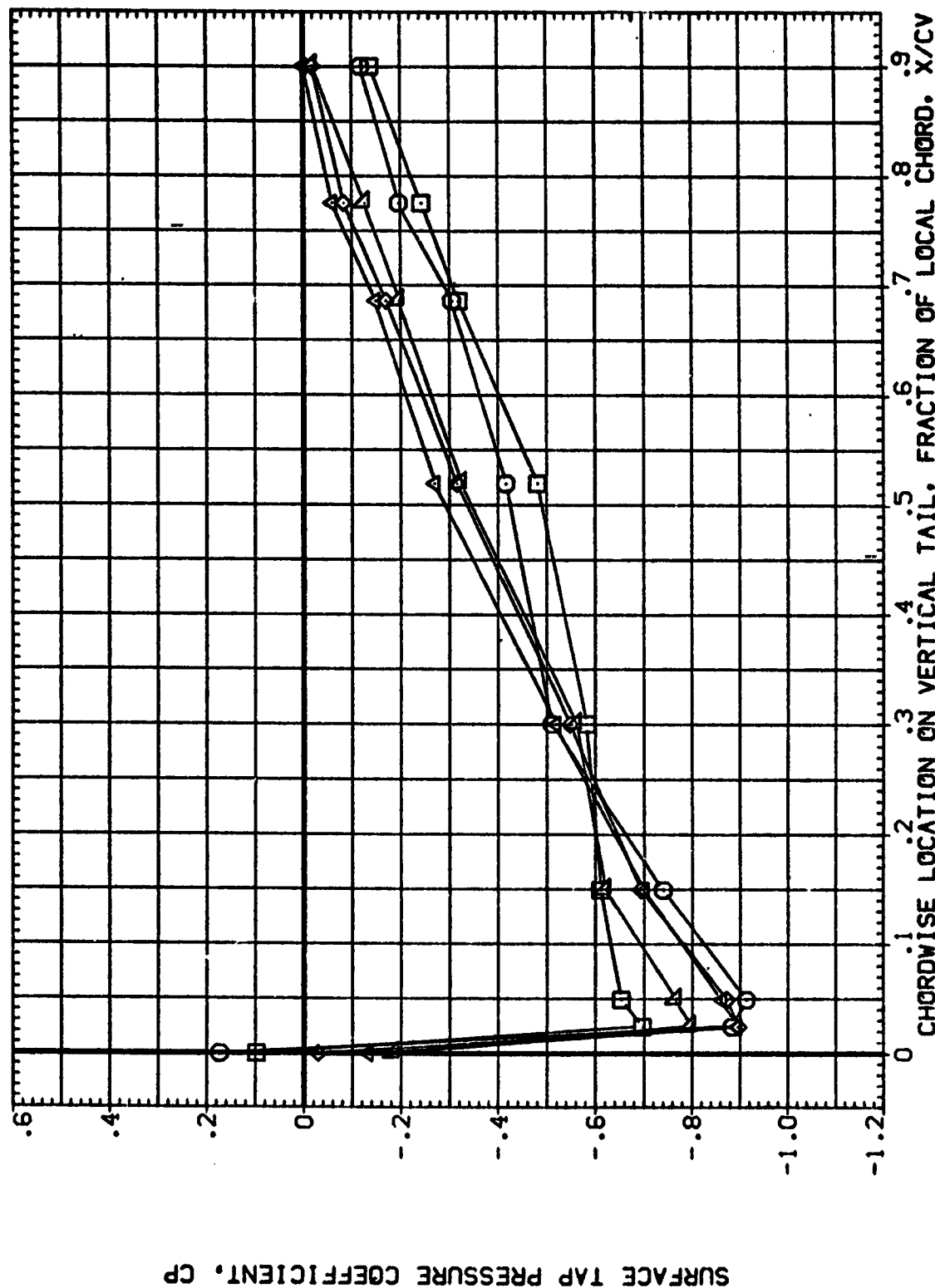


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A146) - 140A/B/C/R ORB VERTICAL (1E8V25)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	SPOBRK	L-ELVN	MACH
▽	-4.000	.316	-4.000	.000	.000	.000	.000
◇	.000			.000	.000	.000	.000
□	4.000			.000	.000	.000	.000
△	8.000			.000	.000	.000	1.100
▽	12.000			.000	.000	.000	1.100

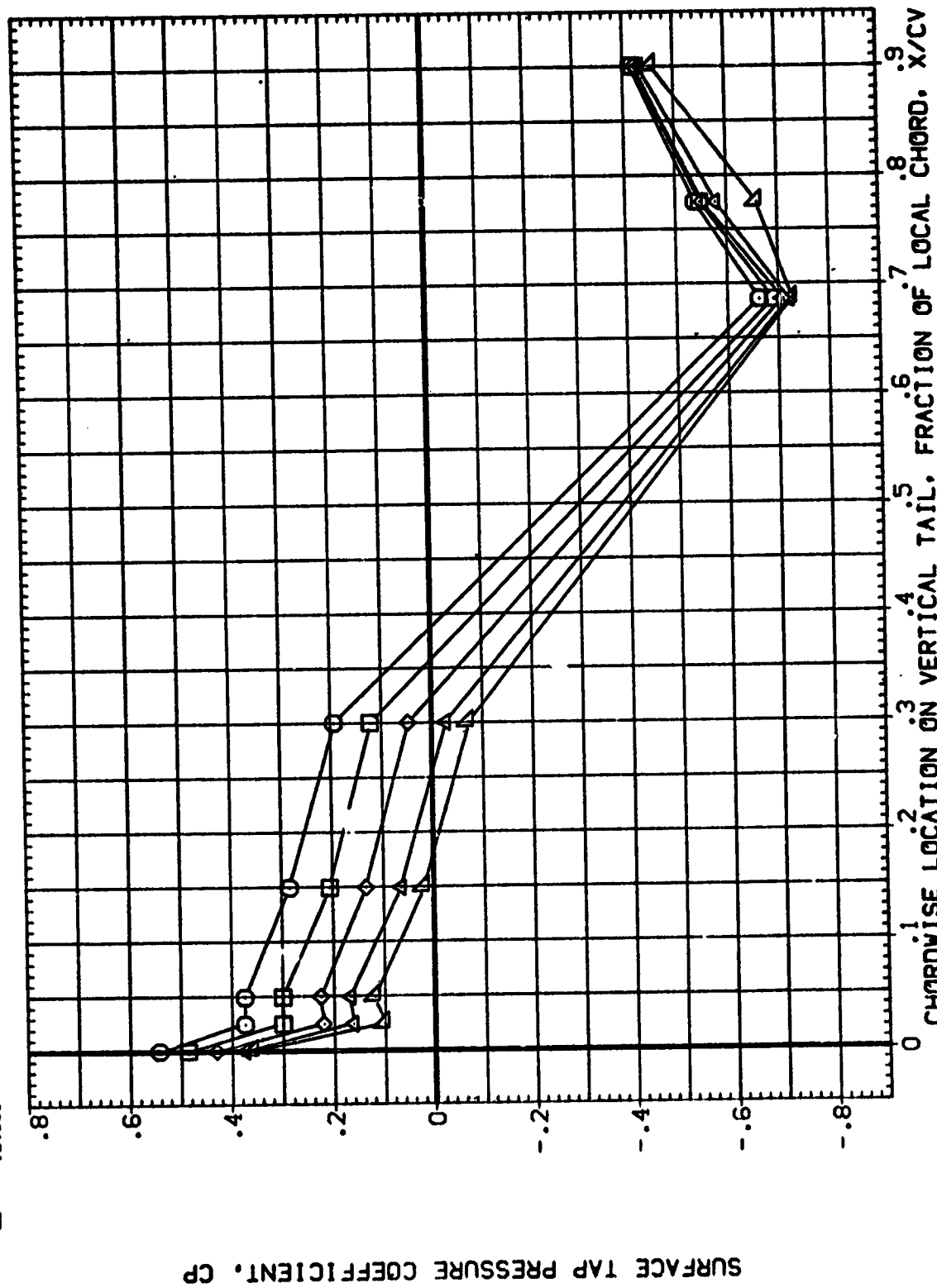


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	SPDBRK	L-ELVN	MACH
BDFLAP	.000	.000	.000
R-ELVN	.000	.000	1.100

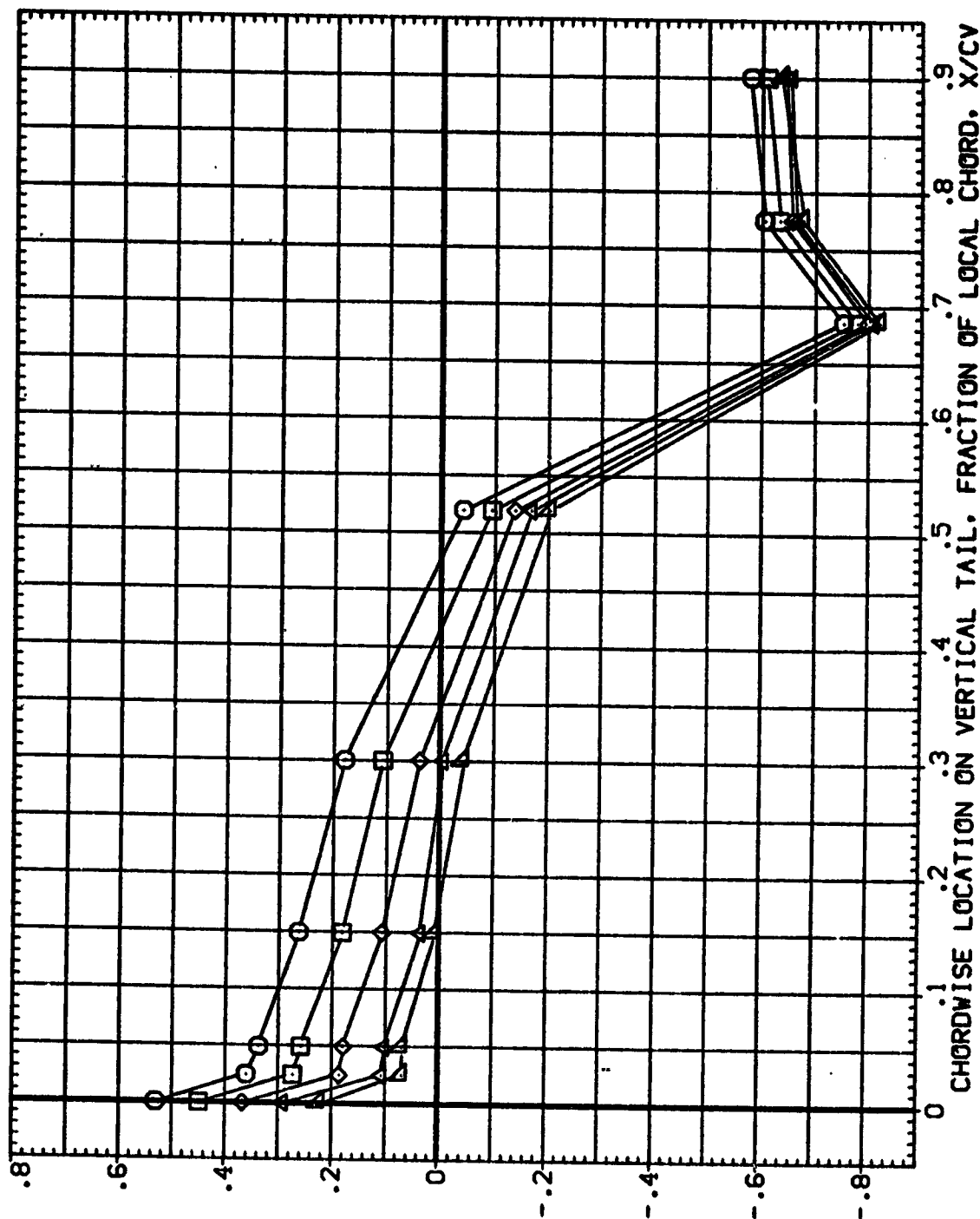


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A146) -1-0A/B/C/R ORB VERTICAL (IE8V25)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.840	-4.000	BOFLAP	.000 SPDBRK
◇	.000			R-ELVN	.000 L-ELVN
□	4.000				.000 MACH
△	8.000				1.100
▽	12.000				

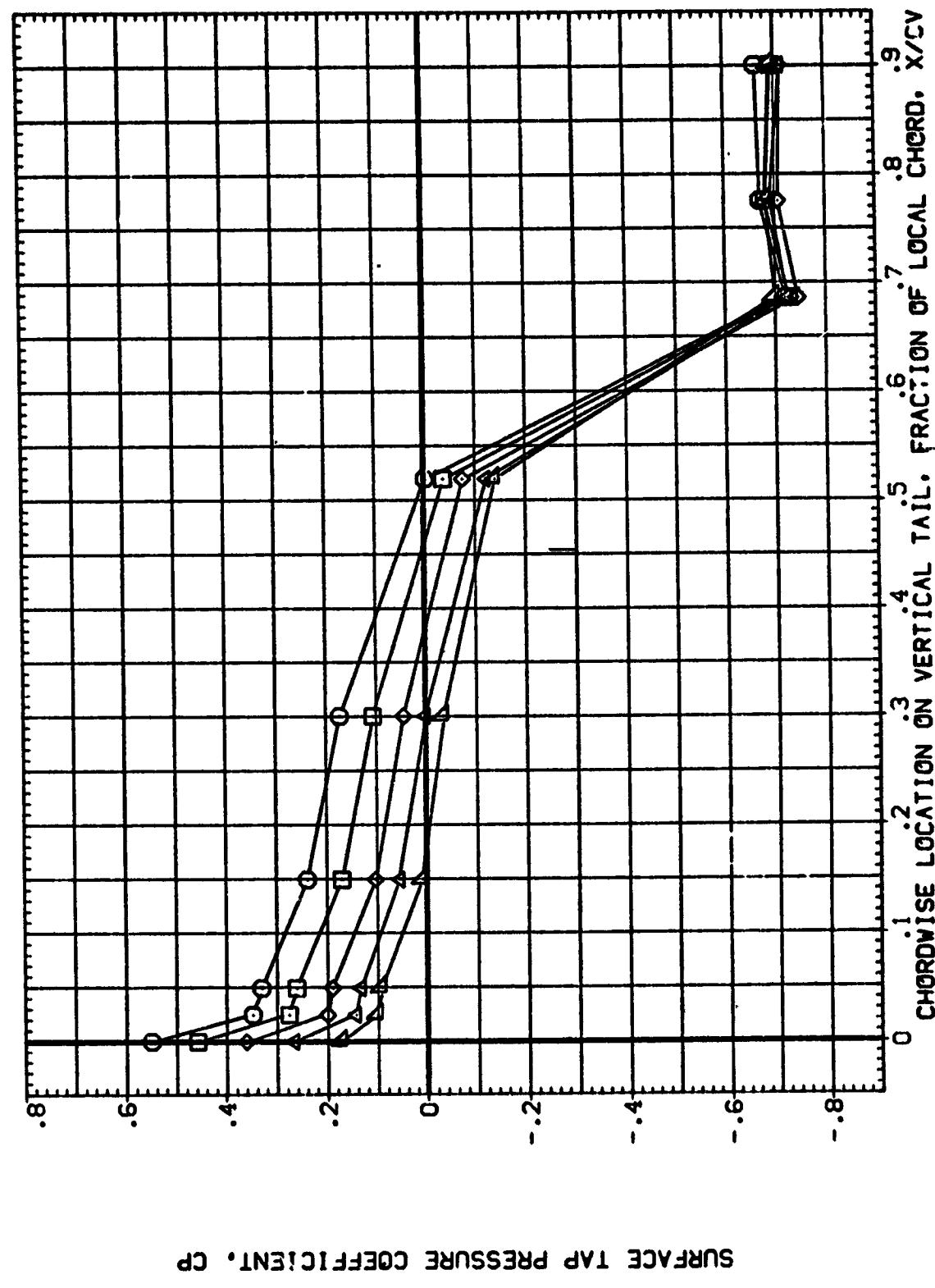


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
○	-4.000	.925	-4.000	RUDDER .000 SPOBRK .000
◇	.000			BOFLAP .000 L-ELVN .000
□	4.000			R-ELVN .000 MACH 1.100
△	8.000			
▽	12.000			

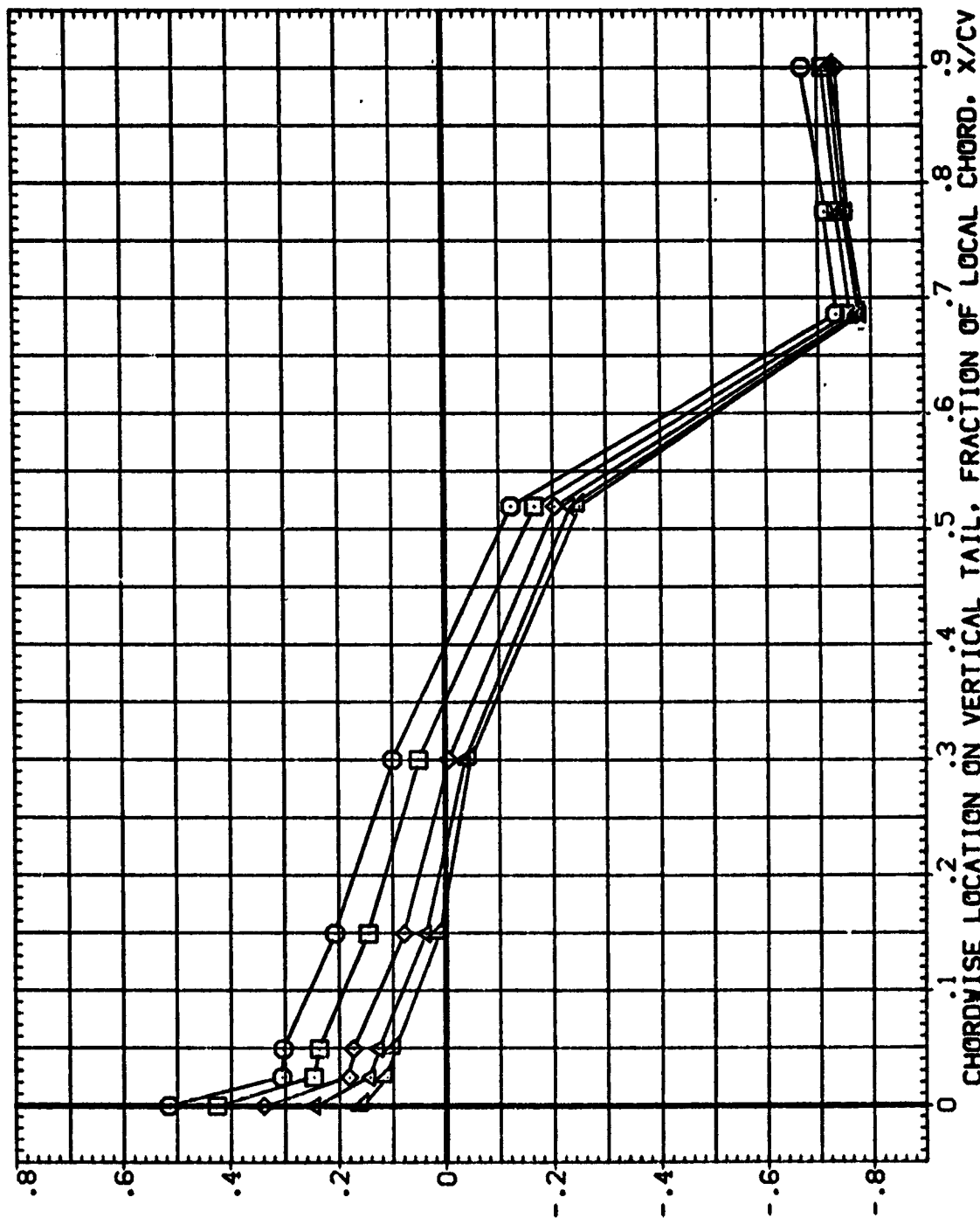


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V25)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES	
○	-4.000	.316	.000	BDFLAP	.000	
□	.000			R-ELVN	.000	
◇	4.000				L-ELVN	.000
△	8.000				MACH	1.100
▽	12.000					

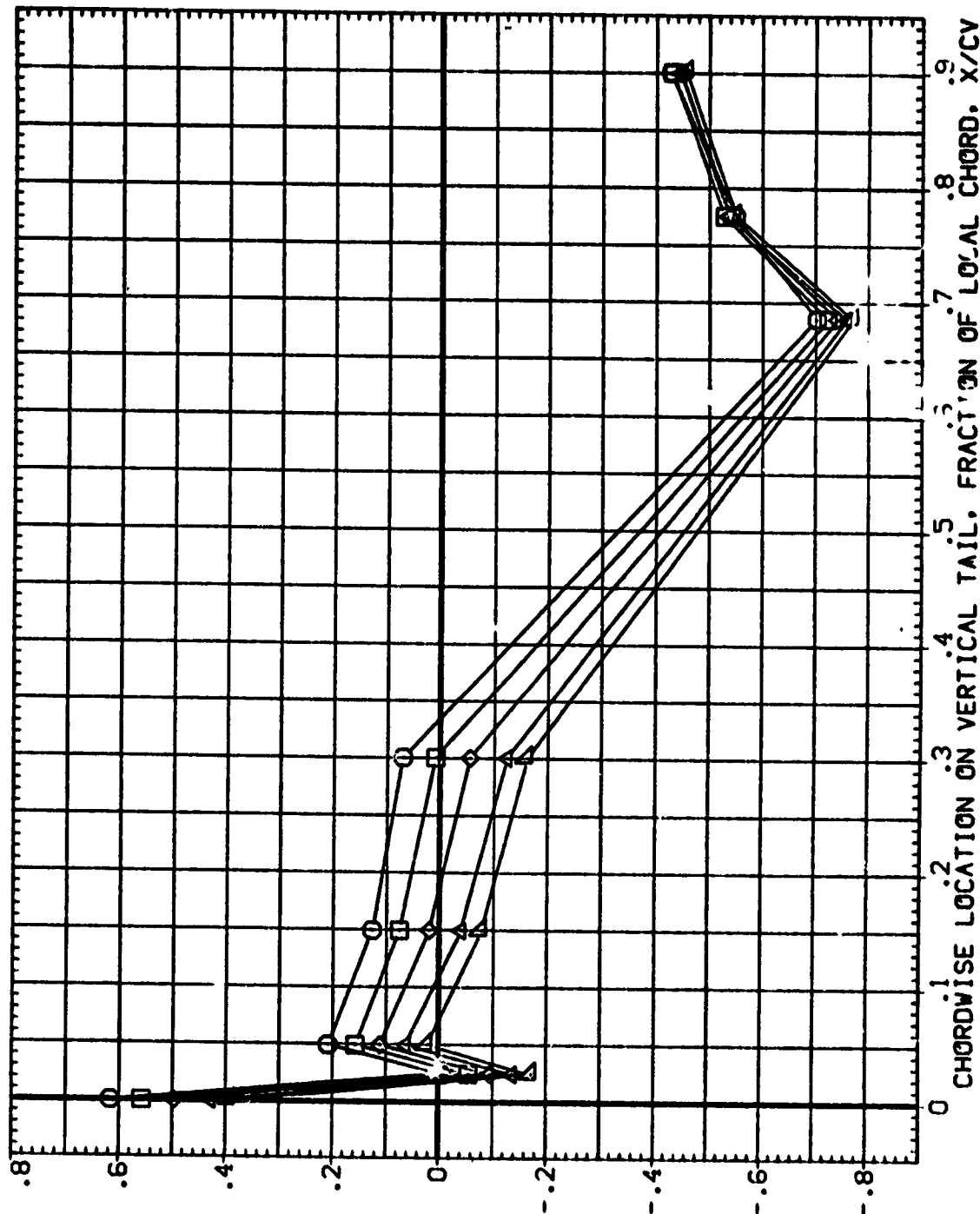


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL
 ▽ □ ◇ ▲

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .600
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

SURFACE TAP PRESSURE COEFFICIENT, CP

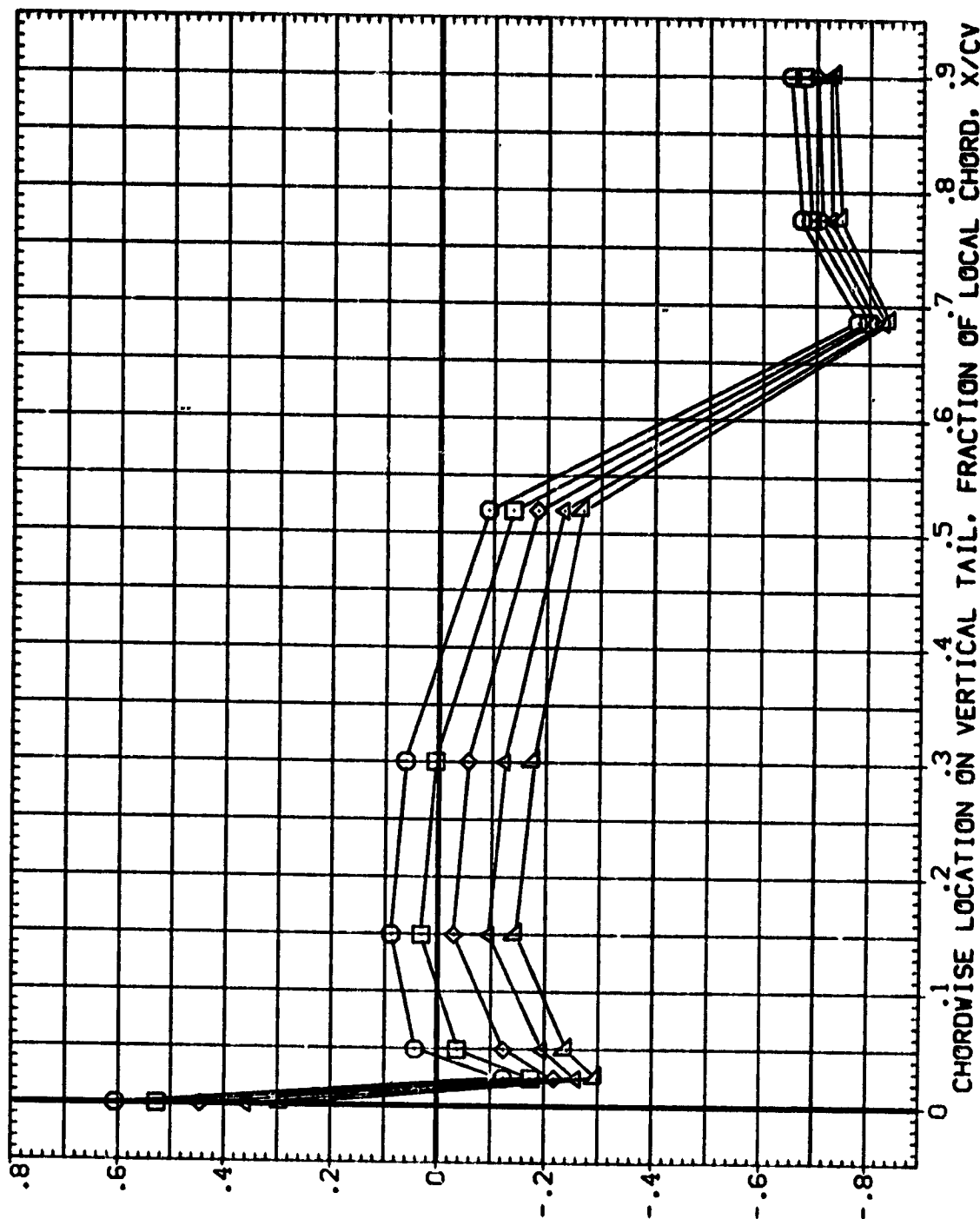


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073 (0A148) - 140A/B/C/R ORB VERTICAL (1E8V25)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.840	.000	BDFLAP	.000 SPDBRK
◇	4.000			R-ELVN	.000 L-ELVN
△	8.000				.000 MACH
□	12.000				1.100

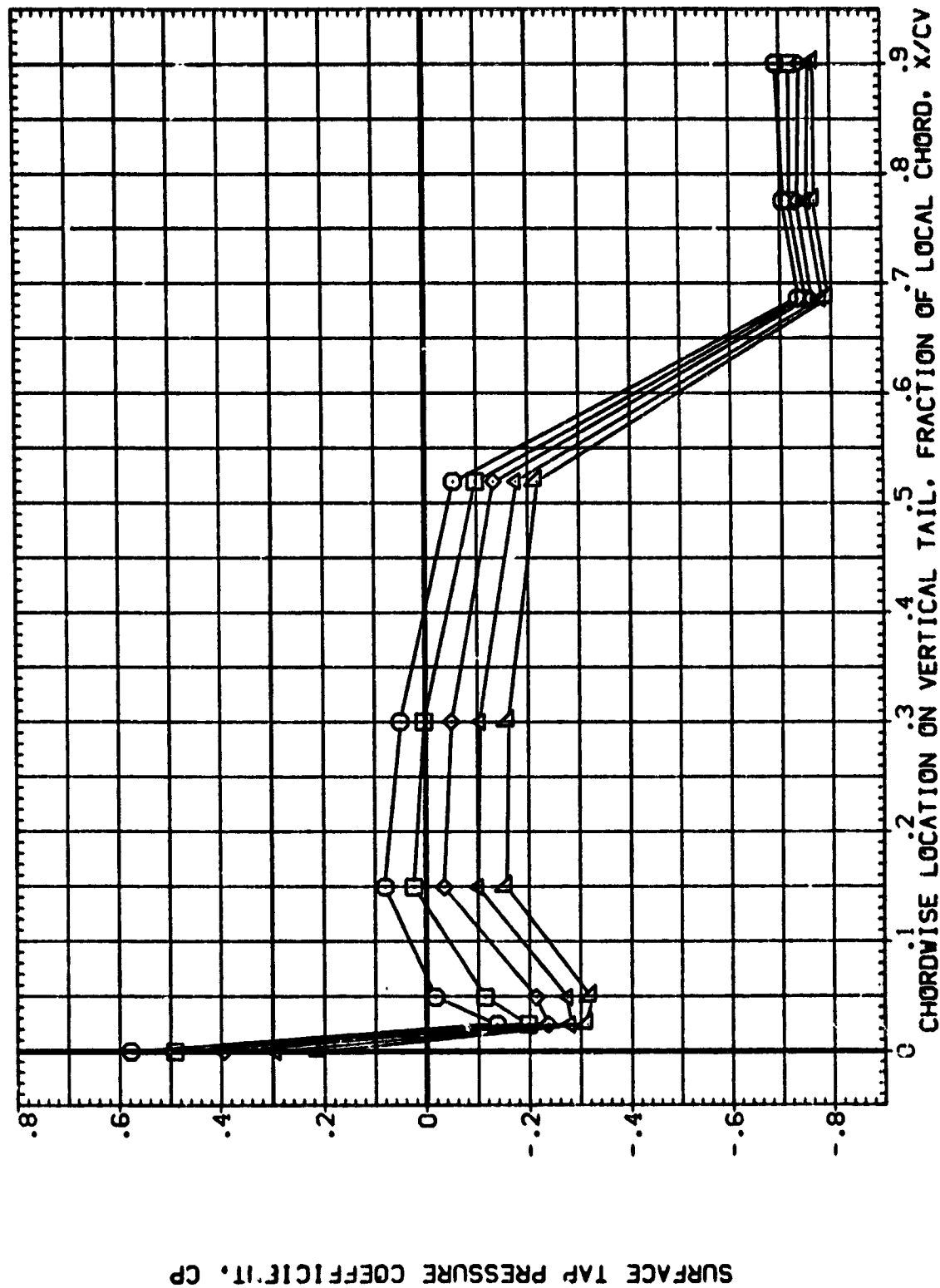


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL	Z/BV		BETA		PARAMETRIC VALUES			
	ALPHA				RUDDER			
	-4.000	.525	.000		BOFLAP	.000	SPDBRK	.000
	4.000				R-ELVN	.000	L-ELVN	.000
	6.000						MACH	1.100
	12.000							

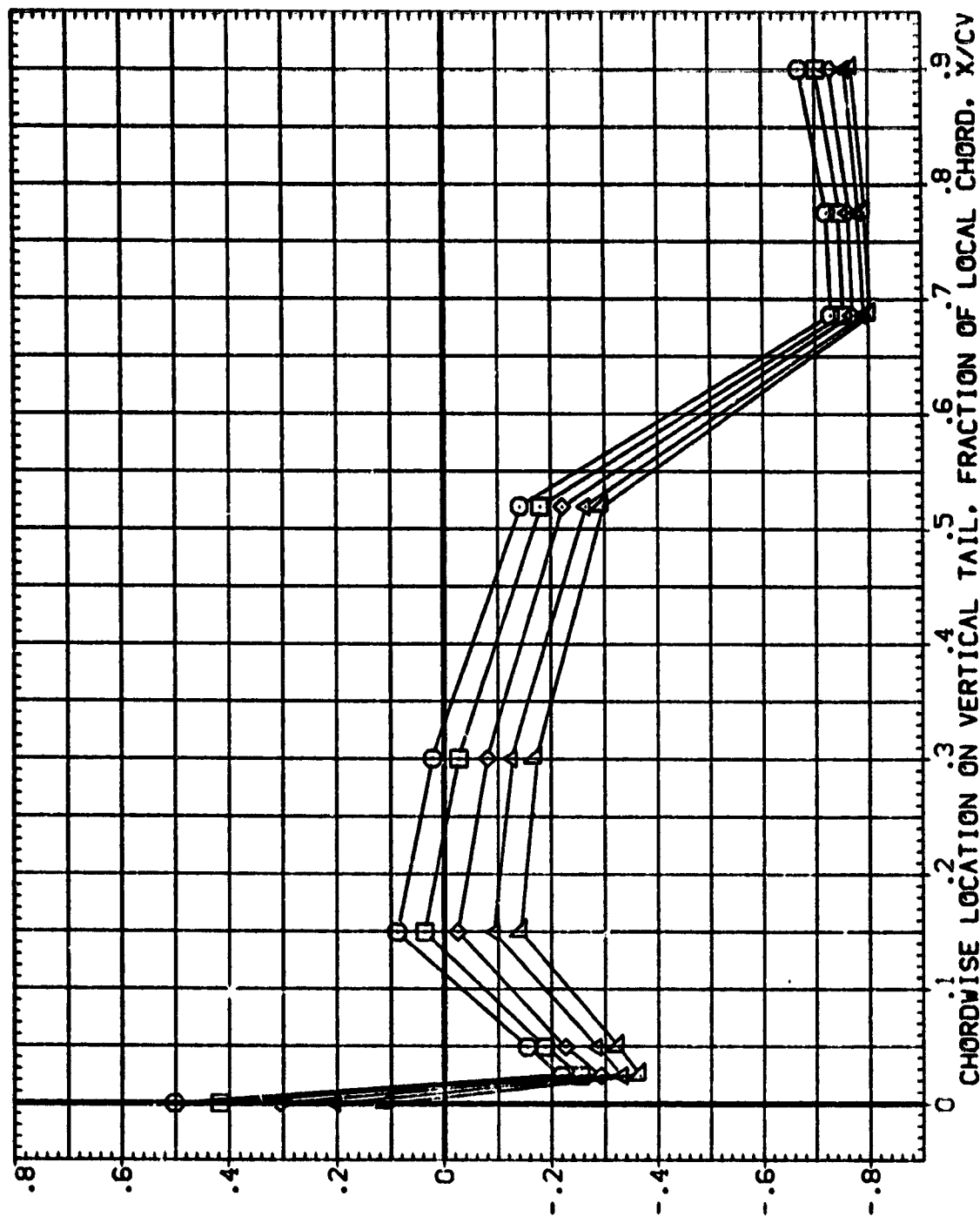


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(OAI48) -140A/B/C/R ORB VERTICAL (IE8V25)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.316	4.000	BDFLAP	.000
□	.000			R-ELVN	.000
◇	4.000			L-ELVN	.000
△	8.000			MACH	1.100
▽	12.000				

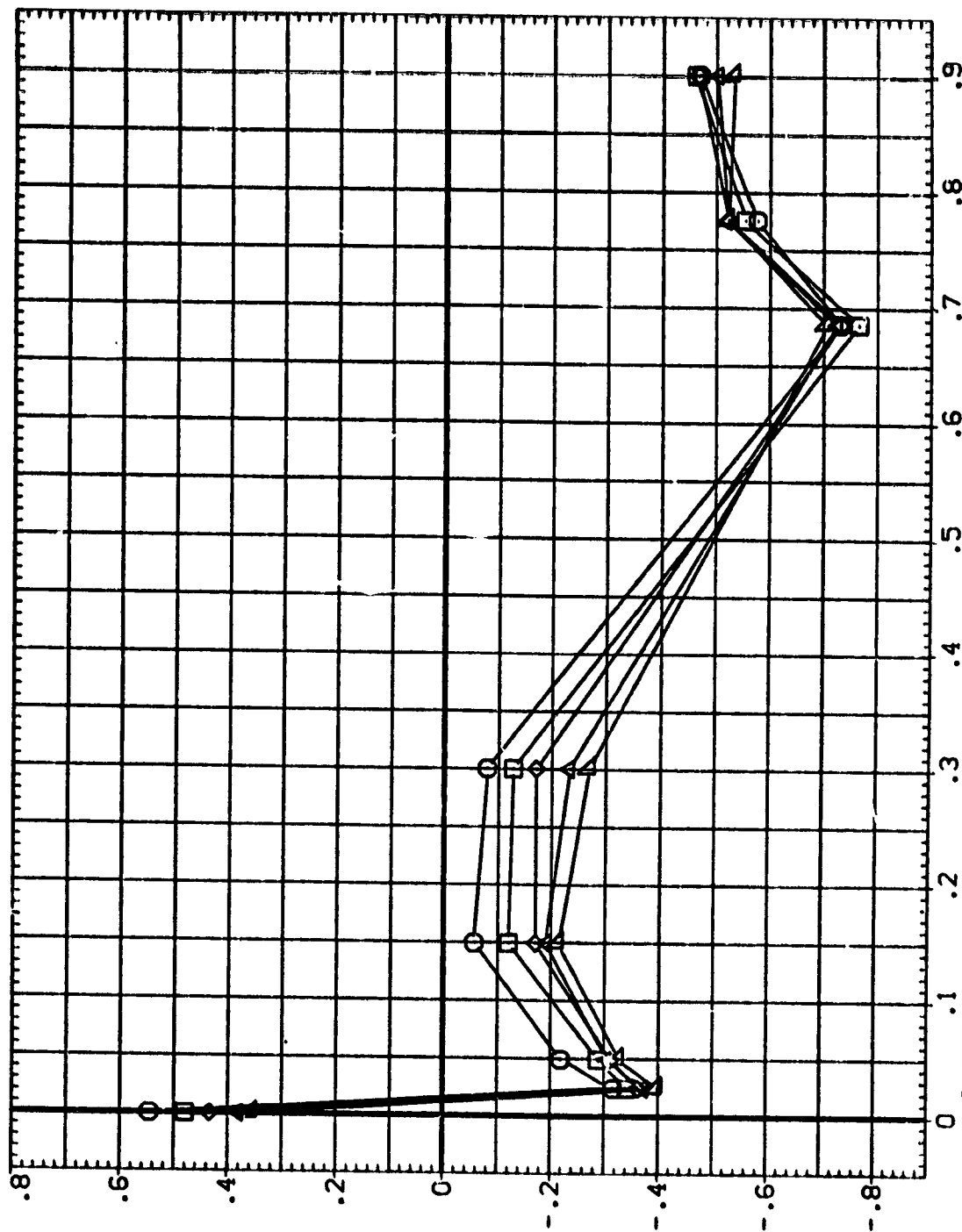


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) - 140A/B/C/R ORB VERTICAL (1E8V25)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
□	-4.000	.600	4.000	.000	.000
◇	.000			.000	.000
△	4.000			.000	1.100
▽	8.000				
▽	12.000				

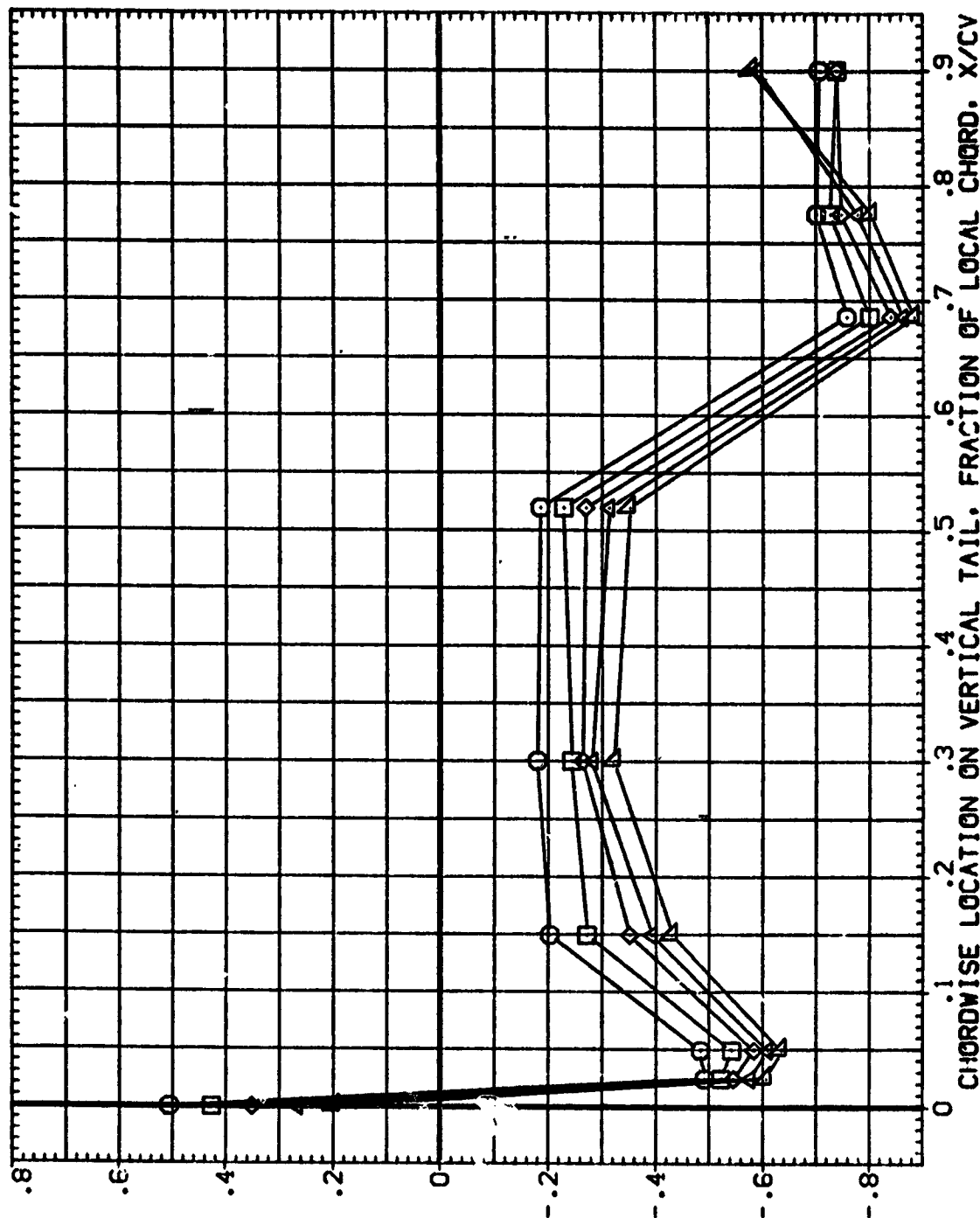


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB VERTICAL (IE8V25)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.840	4.000	BOFLAP	.000 SFDBRK .000
◊	.000			R-ELVN	.000 L-ELVN .000
□	4.000				MACH 1.100
△	8.000				
▽	12.000				

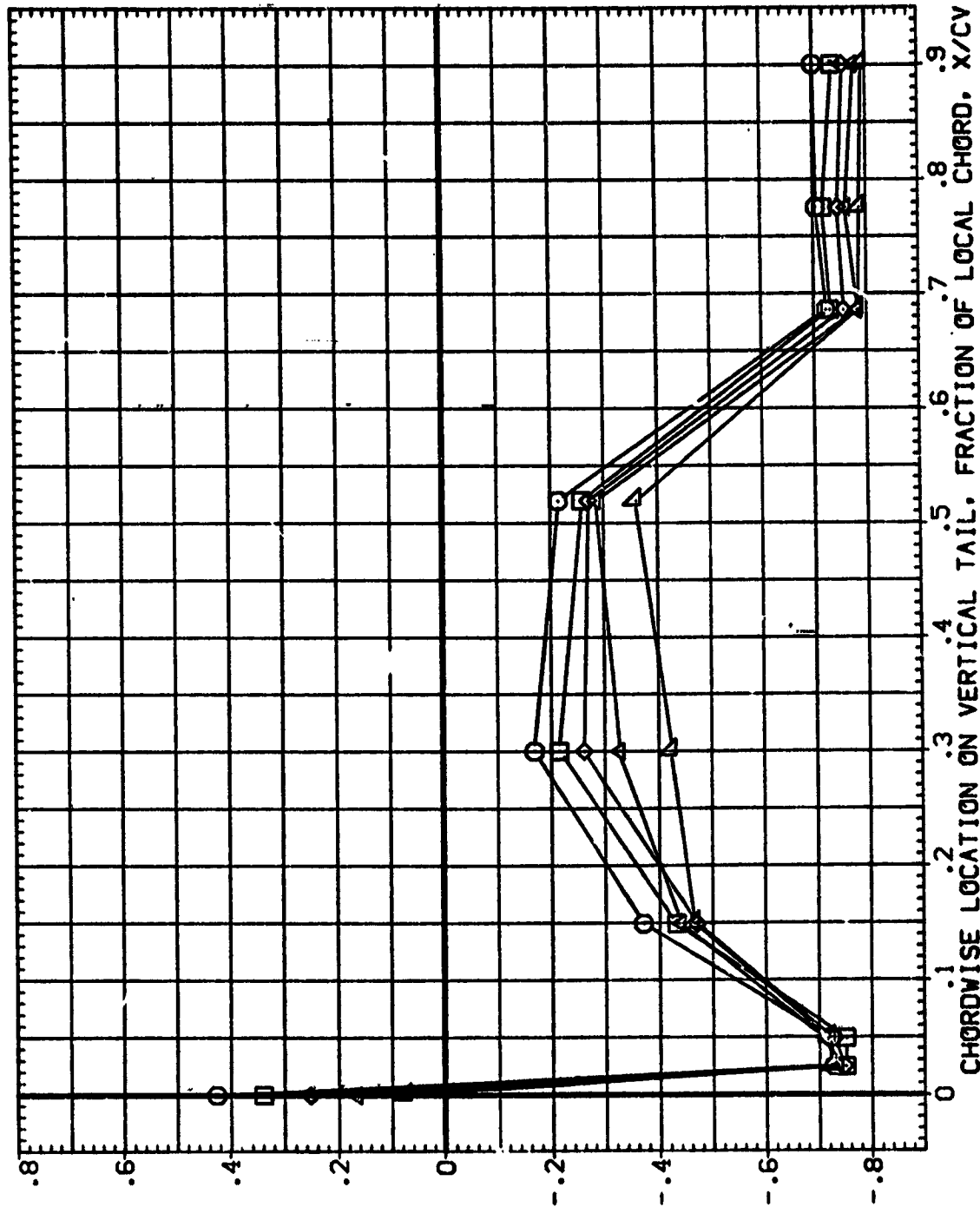


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V25)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
○	-4.000	.925	4.000	RUDDER .000 SPOBRK .000
□	.000			BOFLAP .000 L-ELVN .000
◇	4.000			R-ELVN .000 MACH 1.100
△	8.000			
▽	12.000			

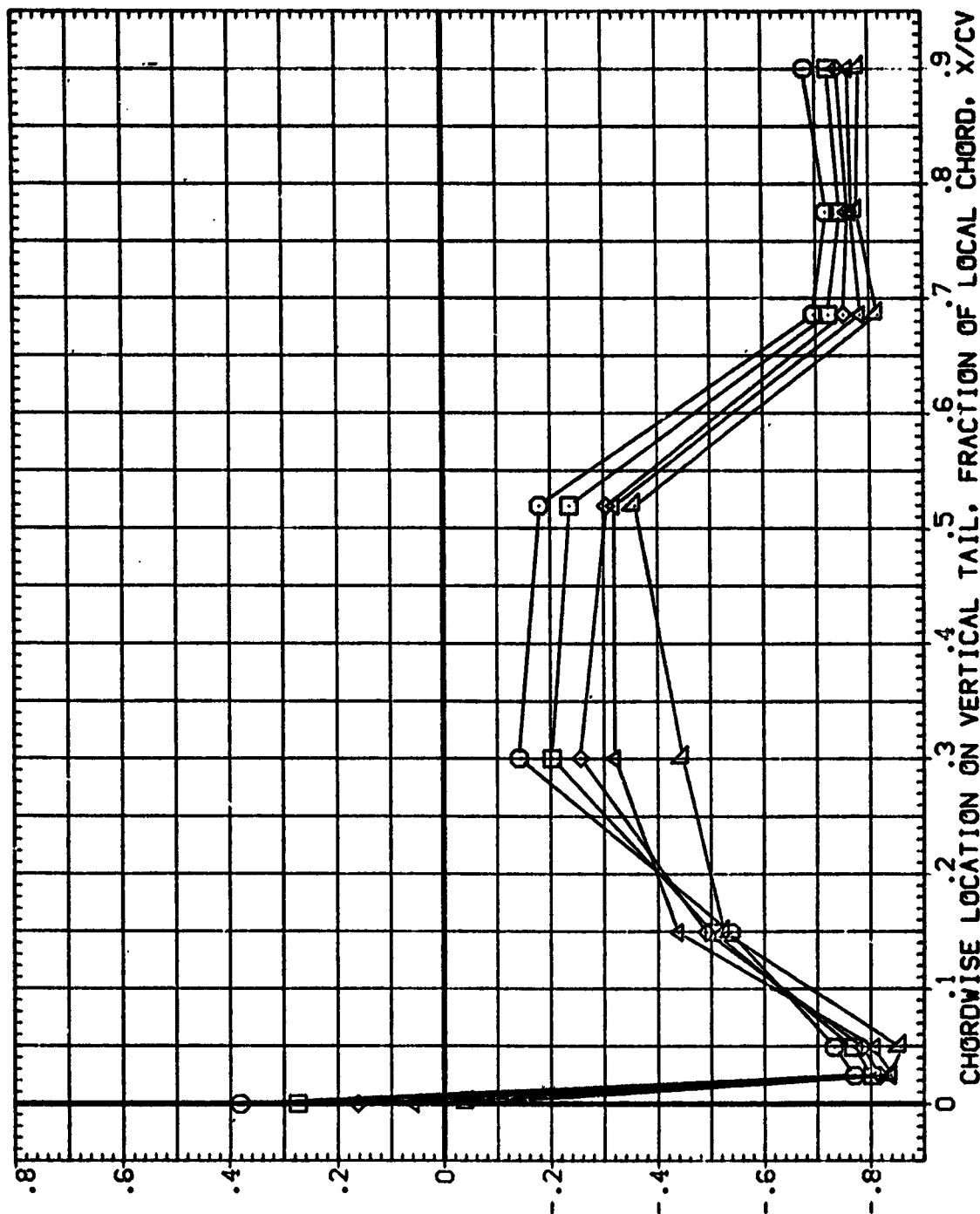


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IESV24)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.316	-4.000	.000	SPOBRK .000
□	.000			.000	L-ELVN .000
◇	4.000			.000	MACH 1.250
△	8.000				
▽	12.000				

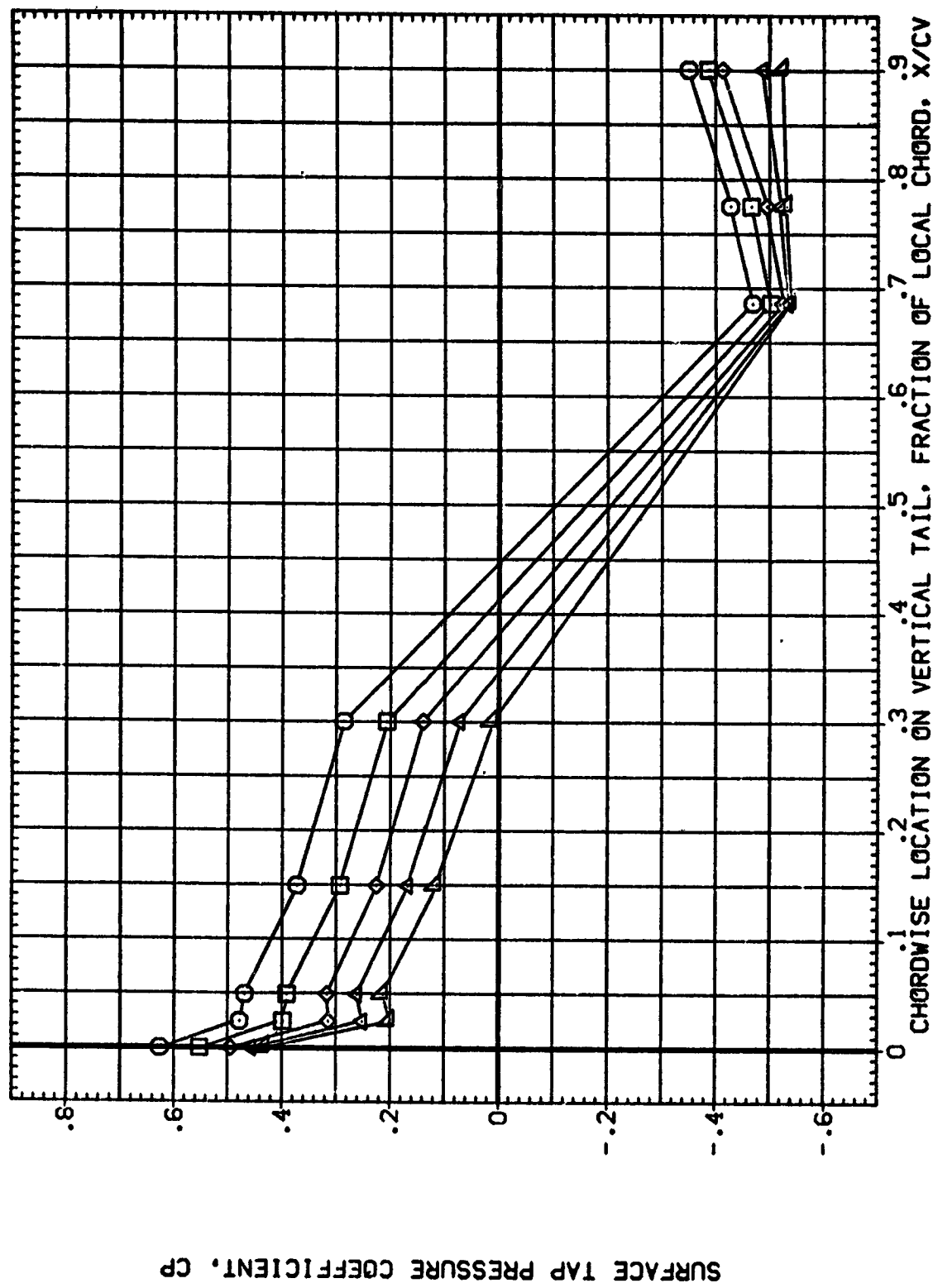


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(GA148) -140A/B/C/R ORB VERTICAL (IE8V24)

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

ALPHA Z/BV BETA
 -4.000 .600 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ○ □ ◇ △ ▽

SURFACE TAP PRESSURE COEFFICIENT, CP

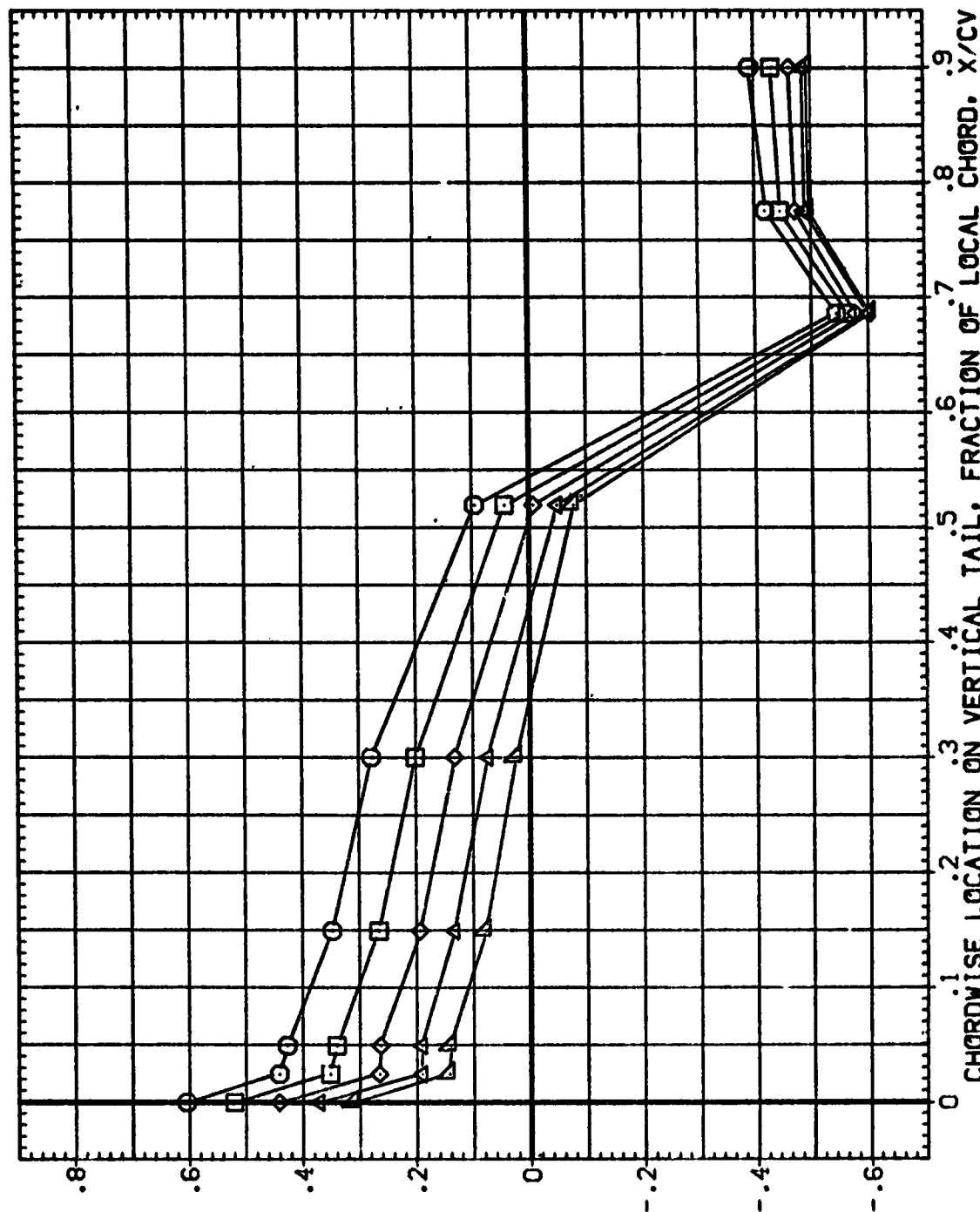


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB VERTICAL (1E8V24)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES	
○	-4.000	.840	-4.000	BOFLAP	.000	
□	.000			R-ELVN	.000	
◇	4.000				L-ELVN	.000
△	8.000				MACH	1.250
▽	12.000					

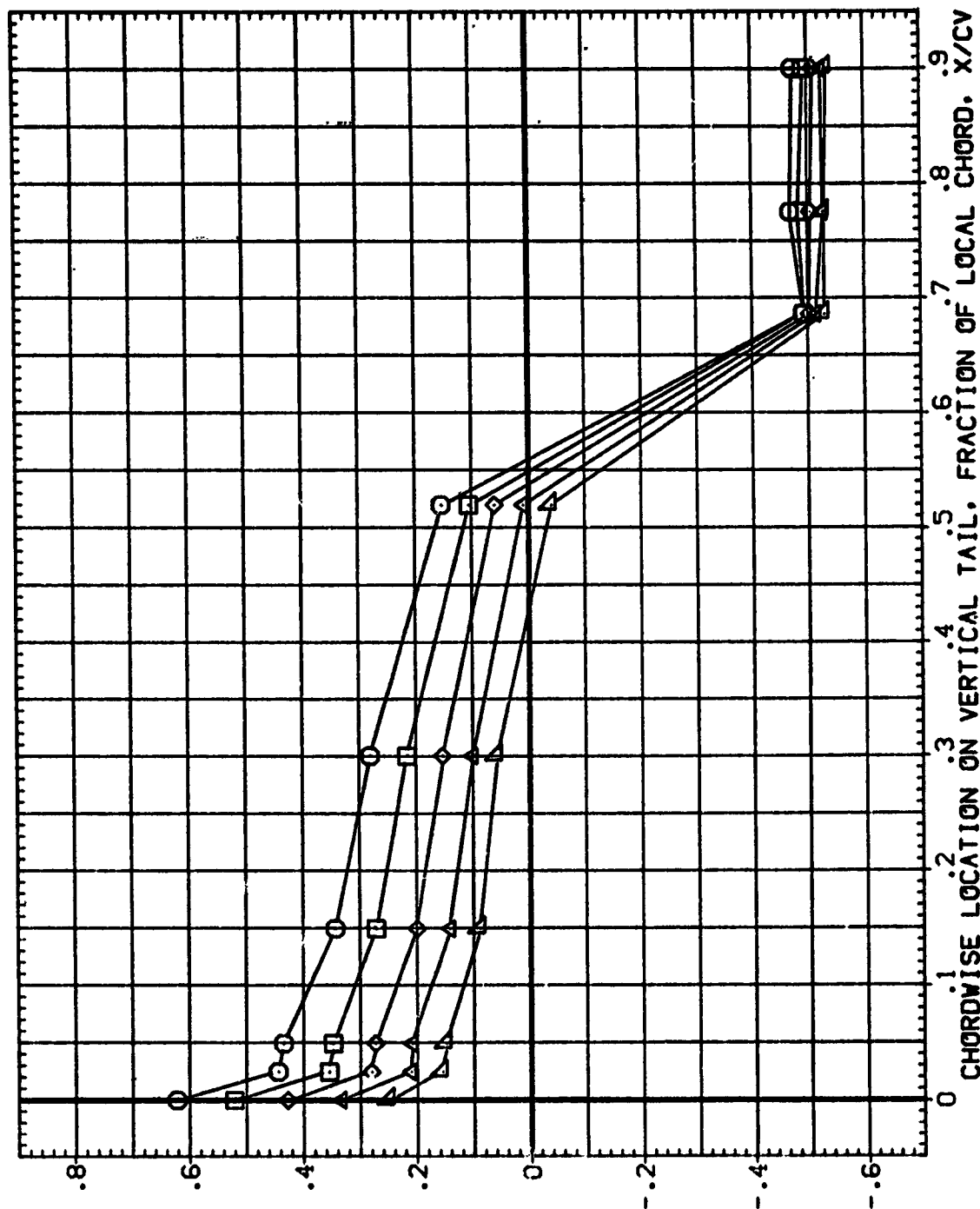


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
○	-4.000	.925	-4.000	RUDDER
□	.000			BDFLAP
◇	4.000			R-ELVN
△	8.000			
	12.000			
				SPOBRK
				L-ELVN
				MACH

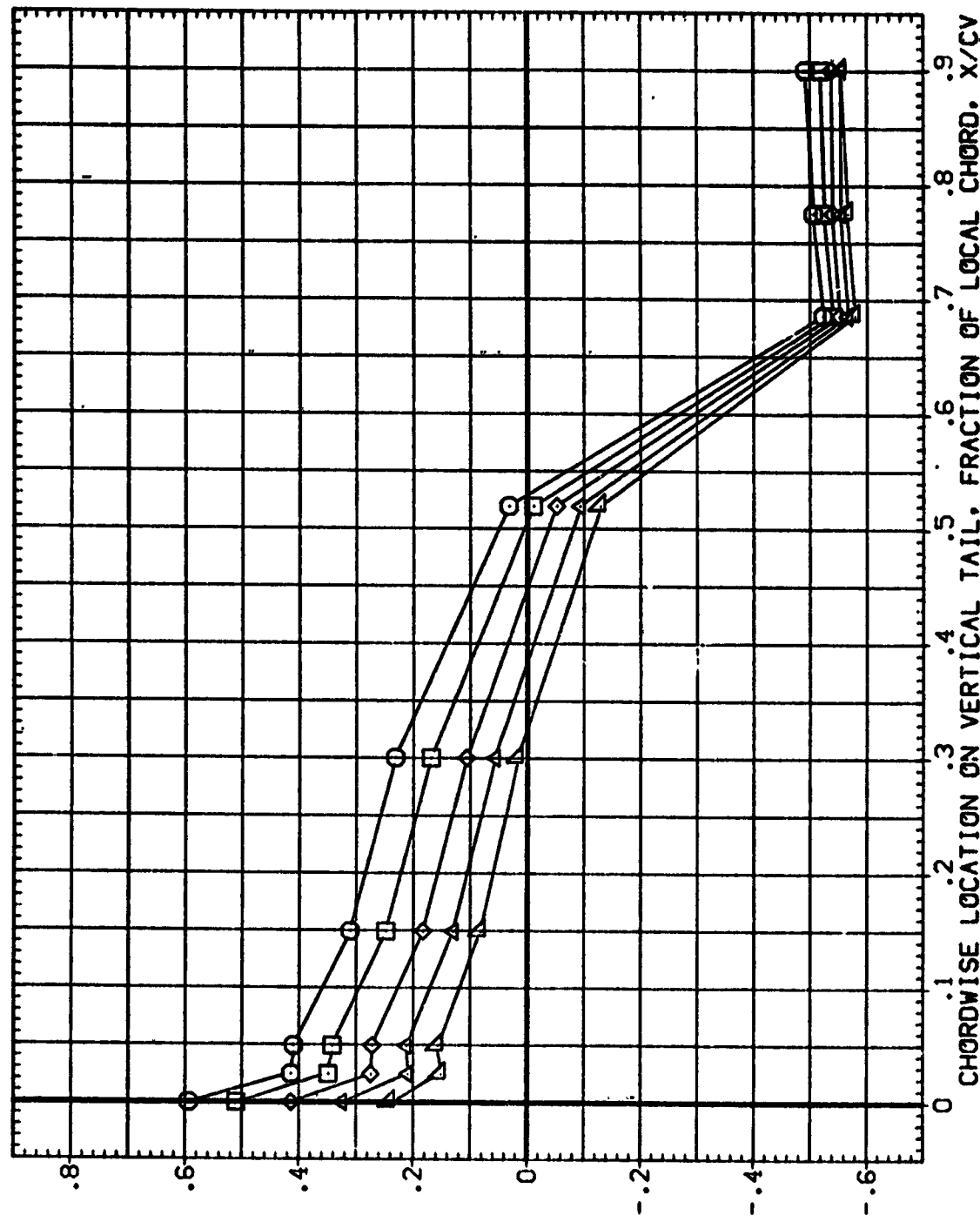
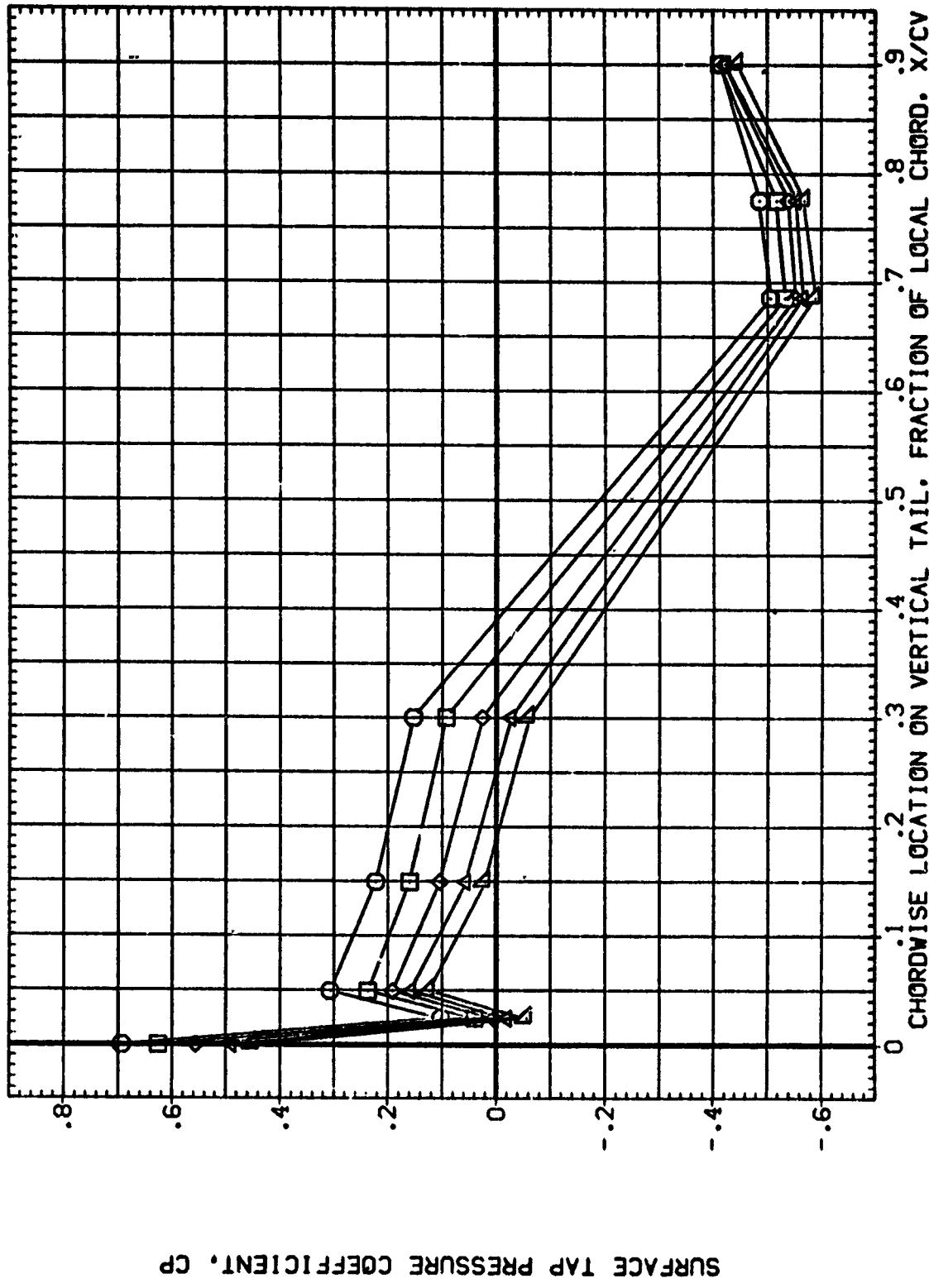


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V24)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES	RUDDER	BOFLAP	R-ELVN	SPDRBK	L-ELVN	MACH
○	-4.000	.316	.000	.000	.000	.000	.000	.000	.000	1.250
□	.000			.000	.000	.000	.000	.000	.000	
◇	4.000			.000	.000	.000	.000	.000	.000	
△	8.000			.000	.000	.000	.000	.000	.000	
▽	12.000			.000	.000	.000	.000	.000	.000	



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(OA148) -140A/B/C/R ORB VERTICAL (IE8V24)

SYMBOL
 ∇ \diamond \square \circ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .600
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDBRK .000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

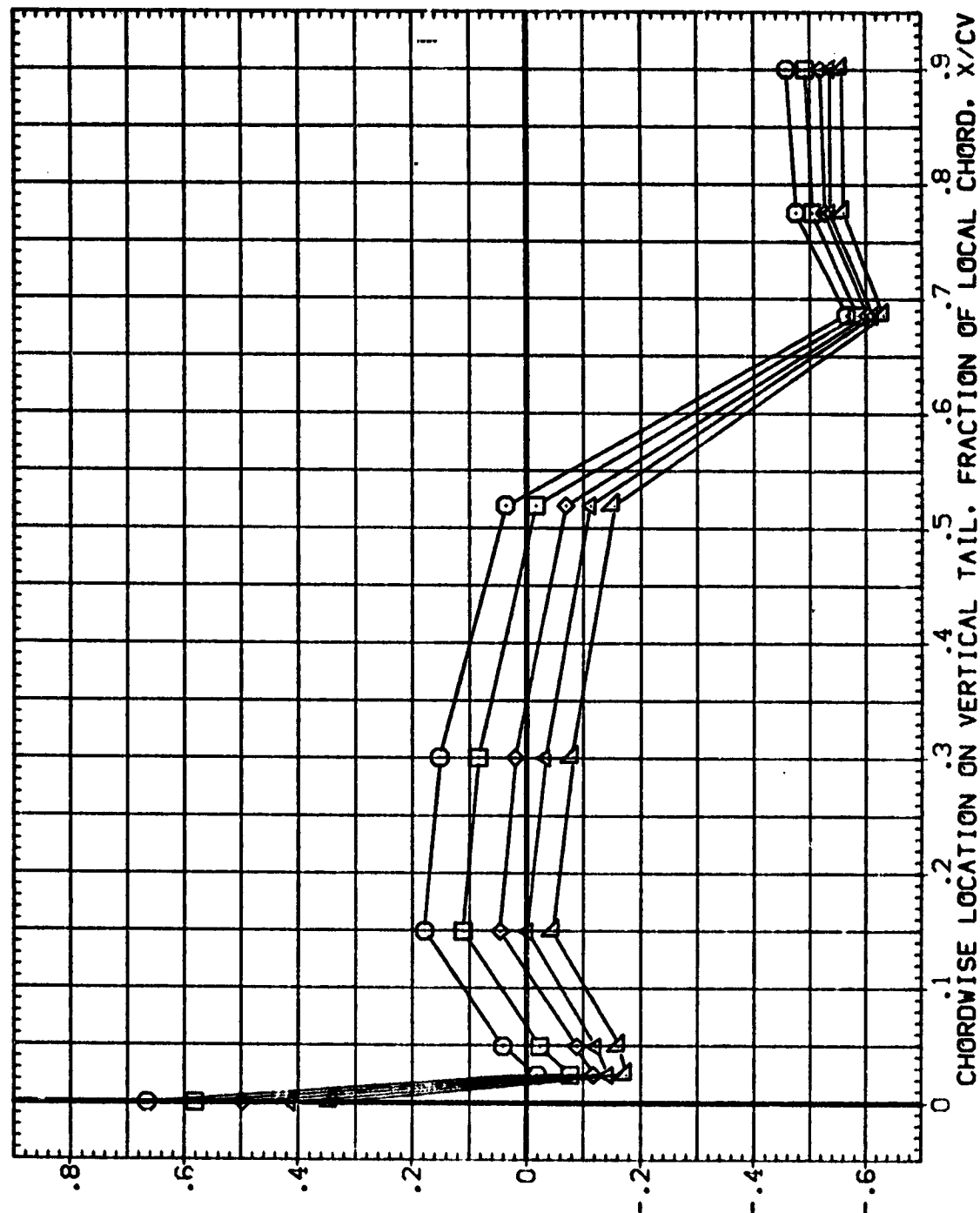


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(CAI48) -140A/B/C/R ORB VERTICAL (IE8V24)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	SPORRK	L-ELVN	ACH
○	-4.000	.840	.000		.000		
□	.000			BOFLAP	.000		
◇	4.000			R-ELVN			1.250
△	8.000						
▽	12.000						

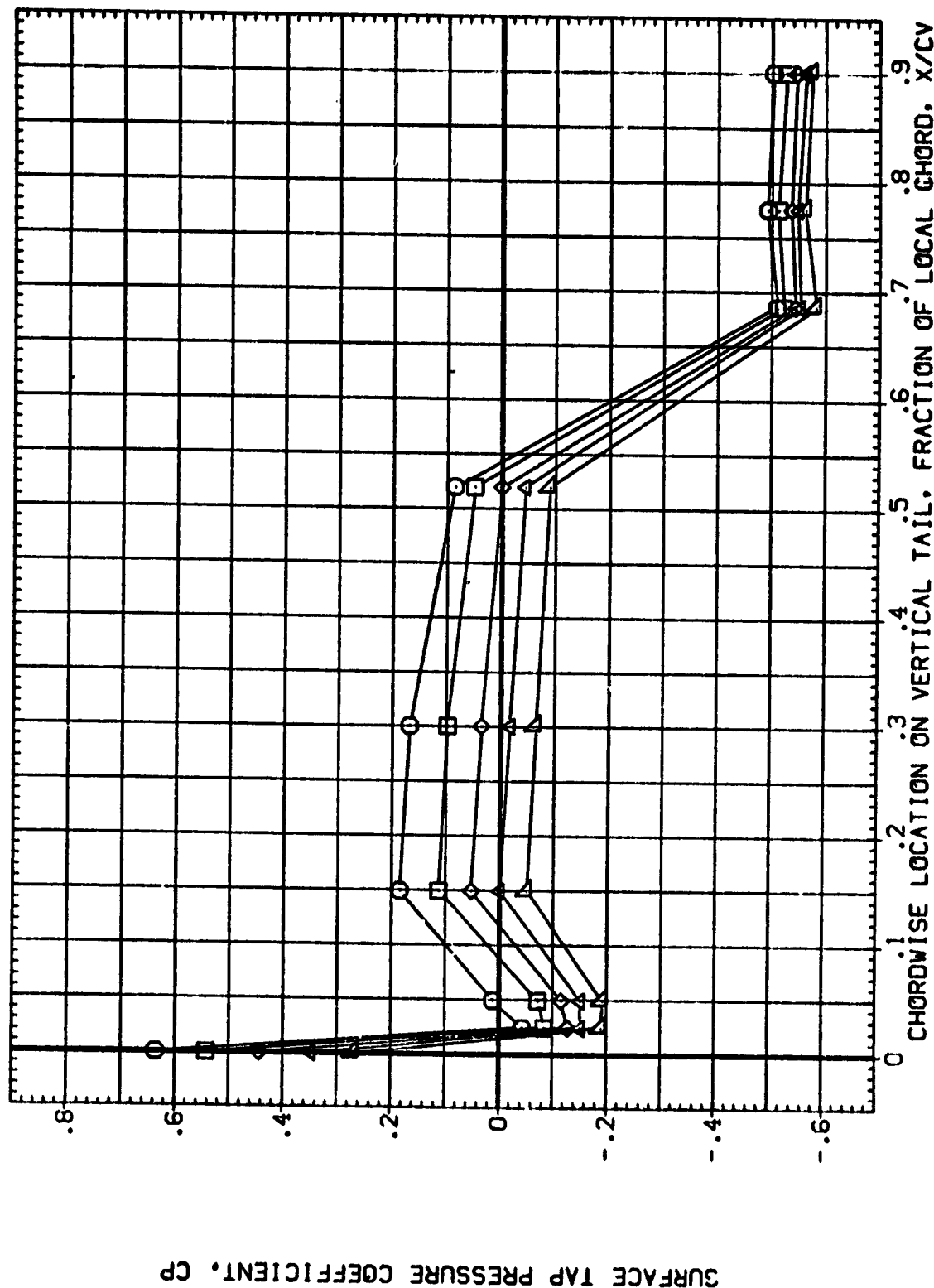


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V24)

PARAMETRIC VALUES
 RUDDER .000 SP088K .000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

ALPHA Z/BV BETA
 -4.000 .925 .000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◇
 □
 ○

SURFACE TAP PRESSURE COEFFICIENT, CP

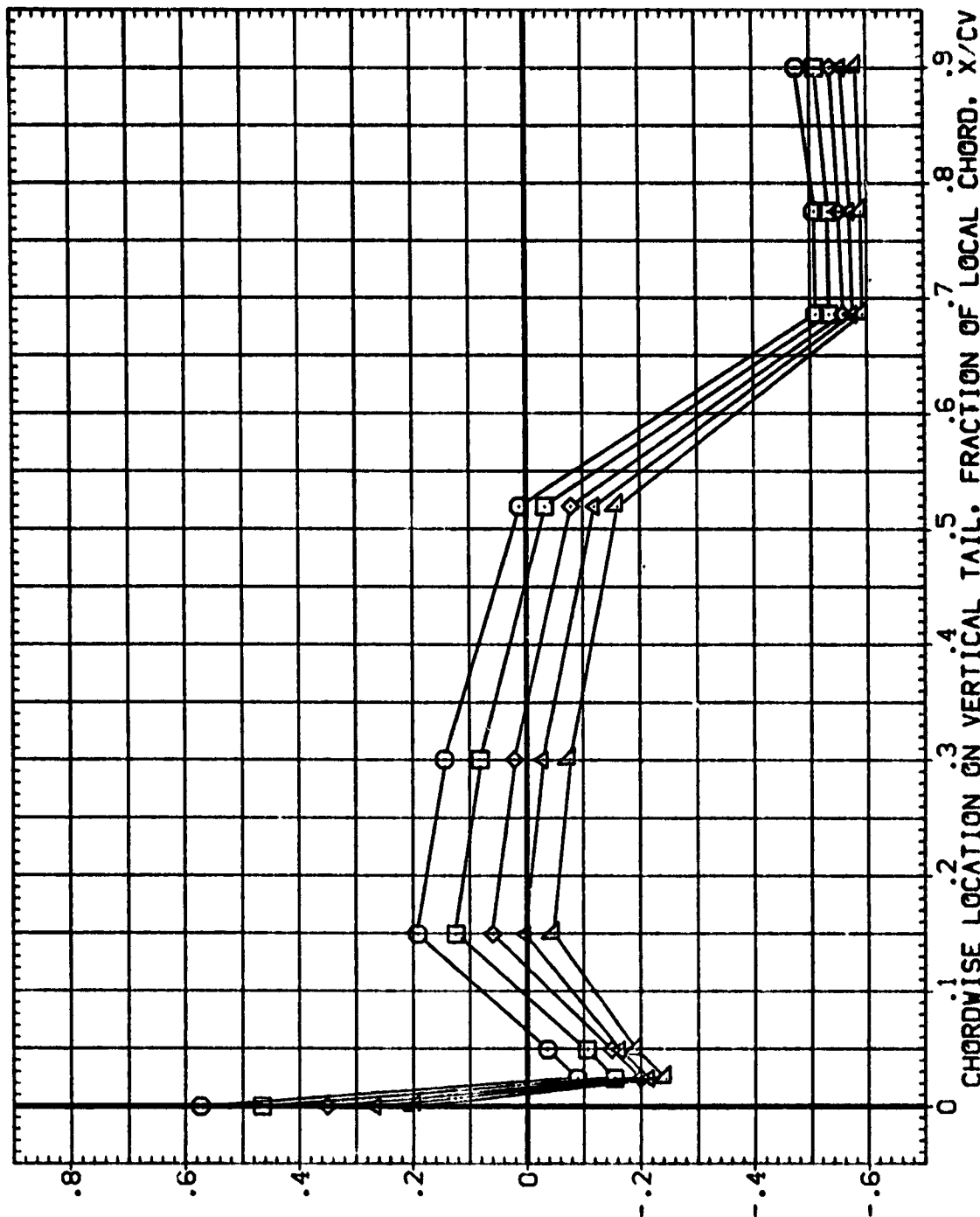


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(CA148) -140A/B/C/R ORB VERTICAL (IE8V24)

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV BETA
 .316 4.000

PARAMETRIC VALUES
 RUDDER .000
 BDFLAP .000
 R-ELVN .000
 SPDBRK .000
 L-ELVN .000
 MACH 1.250

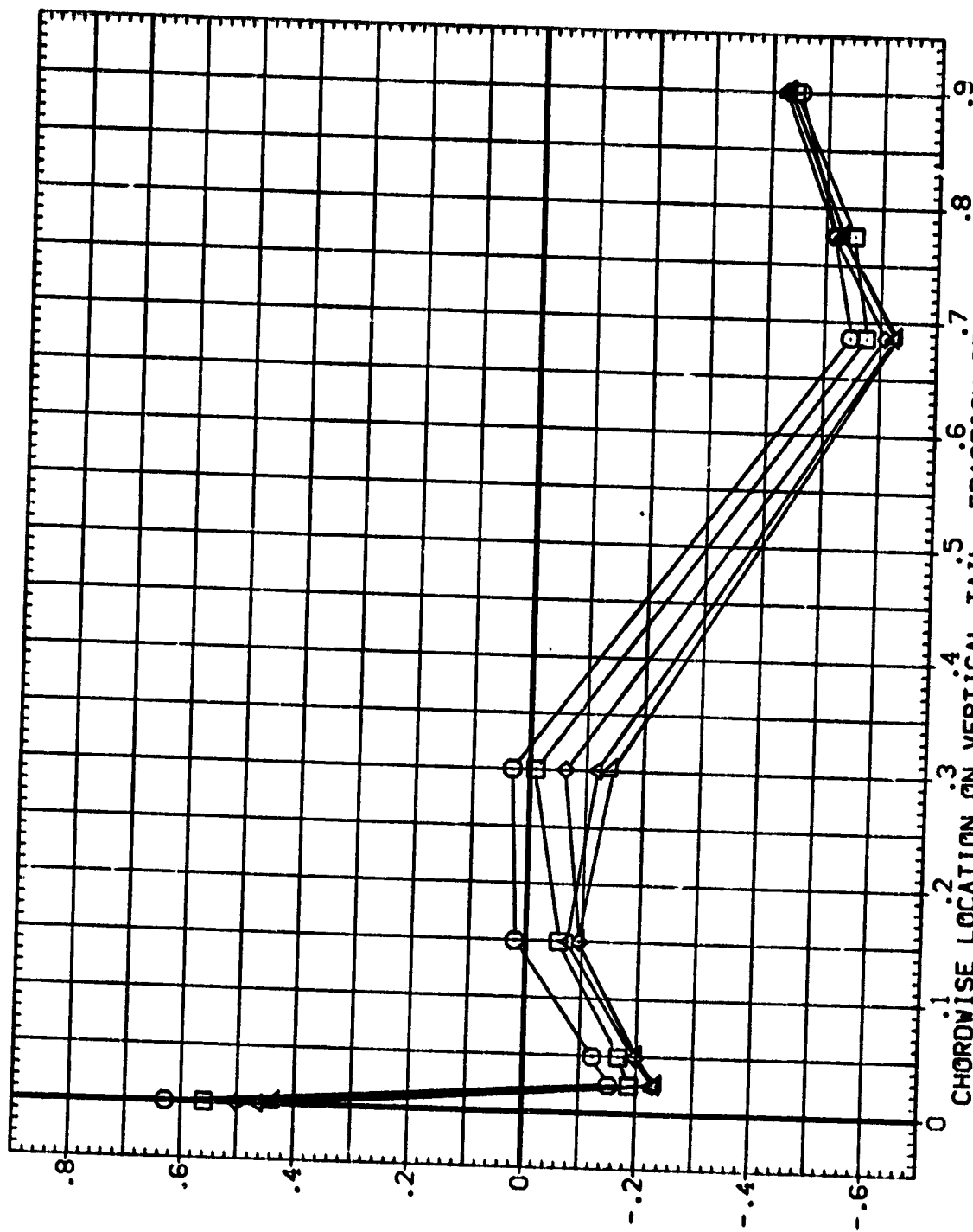


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V24)

PARAMETRIC VALUES
 RUDDER .000 SPOBRK .000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

SYMBOL ALPHA Z/BV BETA
 ▽ -4.000 .600 4.000
 ◊ .000 .000 .000
 □ 4.000 .000 .000
 △ 8.000 .000 .000
 ▽ 12.000 .000 .000

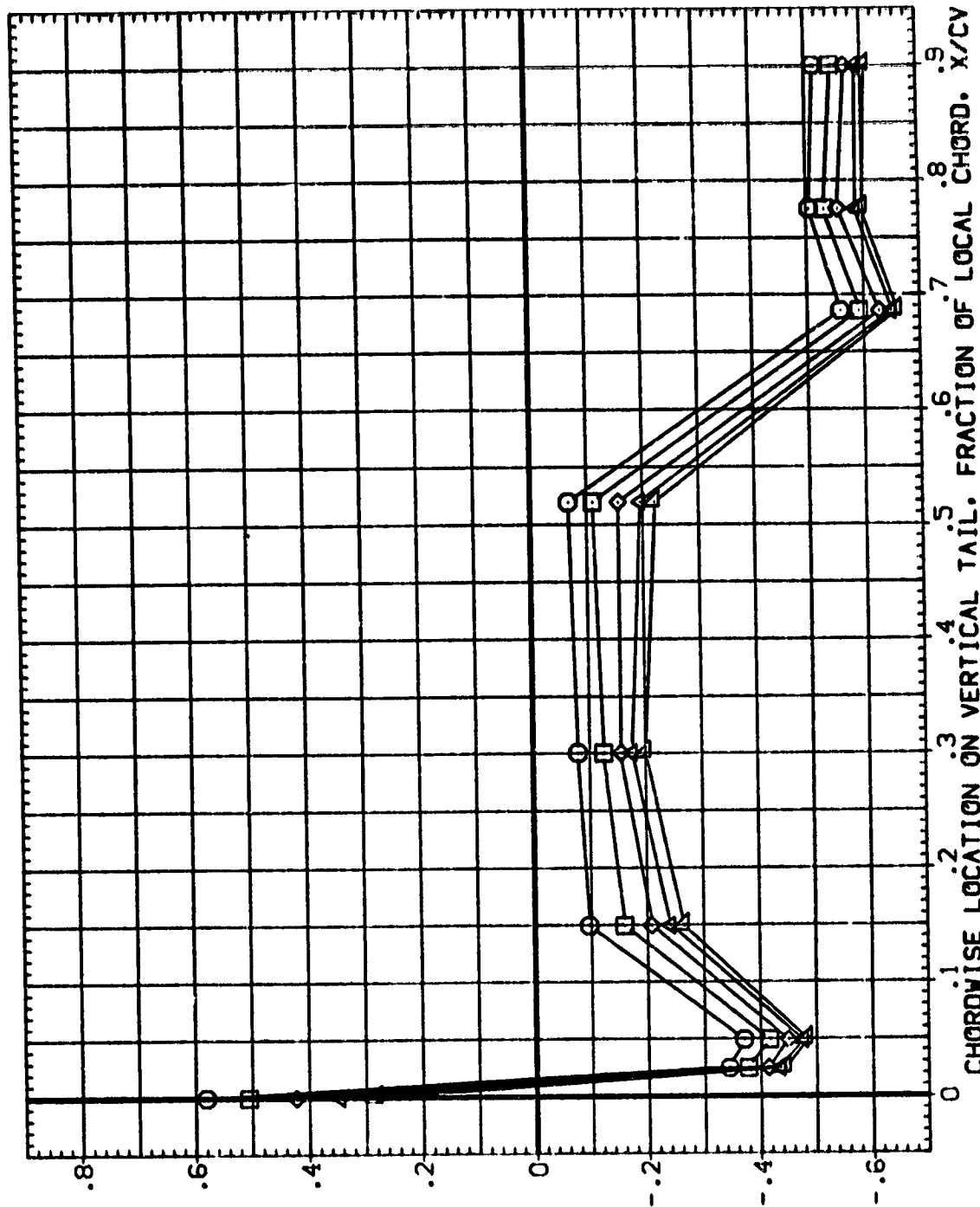


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) - 40A/B/C/R ORB VERTICAL

(1E8V24)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .840

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 SPOBRK .000
 L-ELVN .000
 MACH 1.250

SURFACE TAP PRESSURE COEFFICIENT, CP

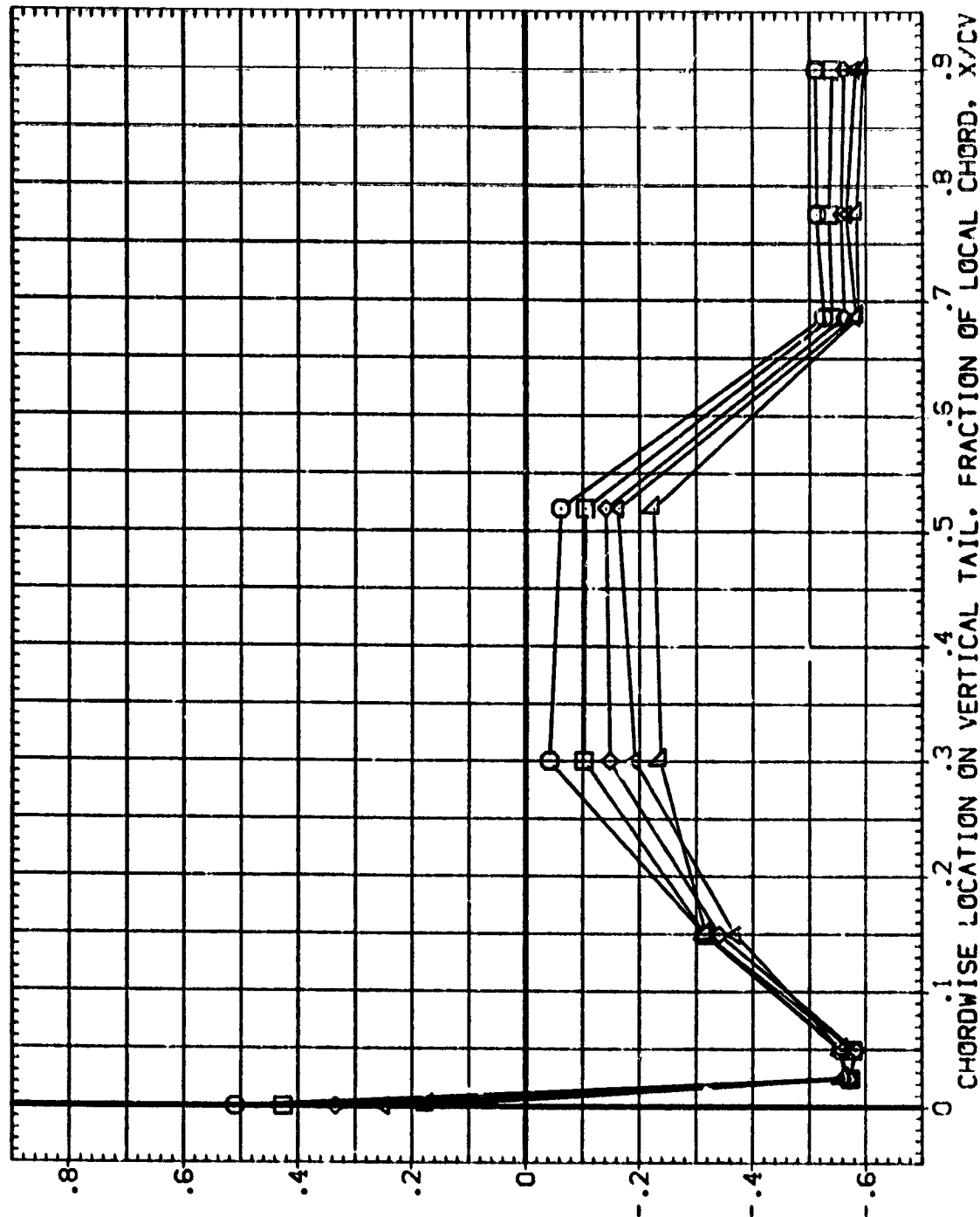


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(CA146) -140A/B/C/R ORB VERTICAL (IE8V24)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925

BETA
 4.000

PARAMETRIC VALUES

RUDDER	SPOBRK	L-ELVN	MACH
.000	.000	.000	1.250

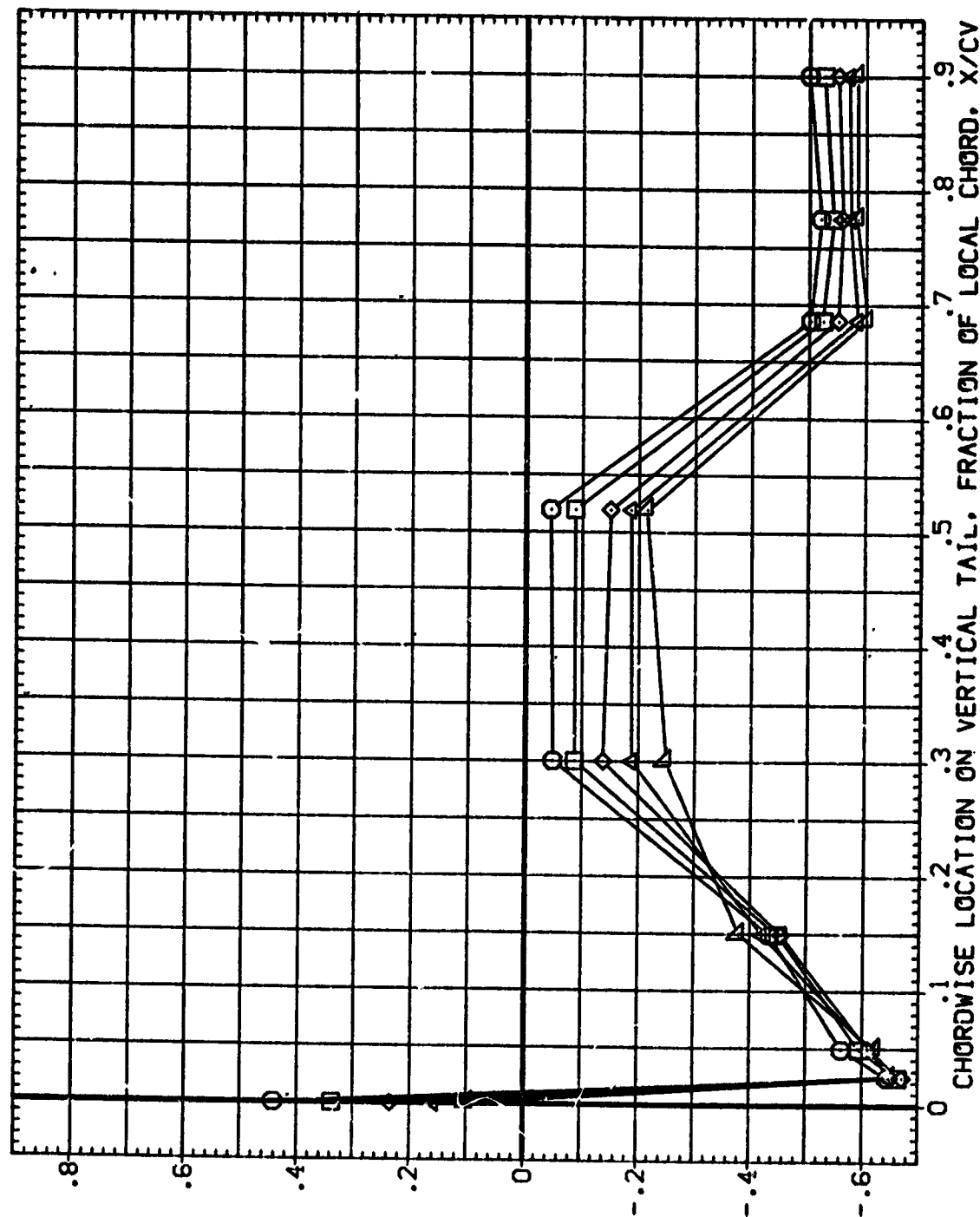


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

(1E8V23)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV .316
 BETA -4.000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK .000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

SURFACE TAP PRESSURE COEFFICIENT, CP

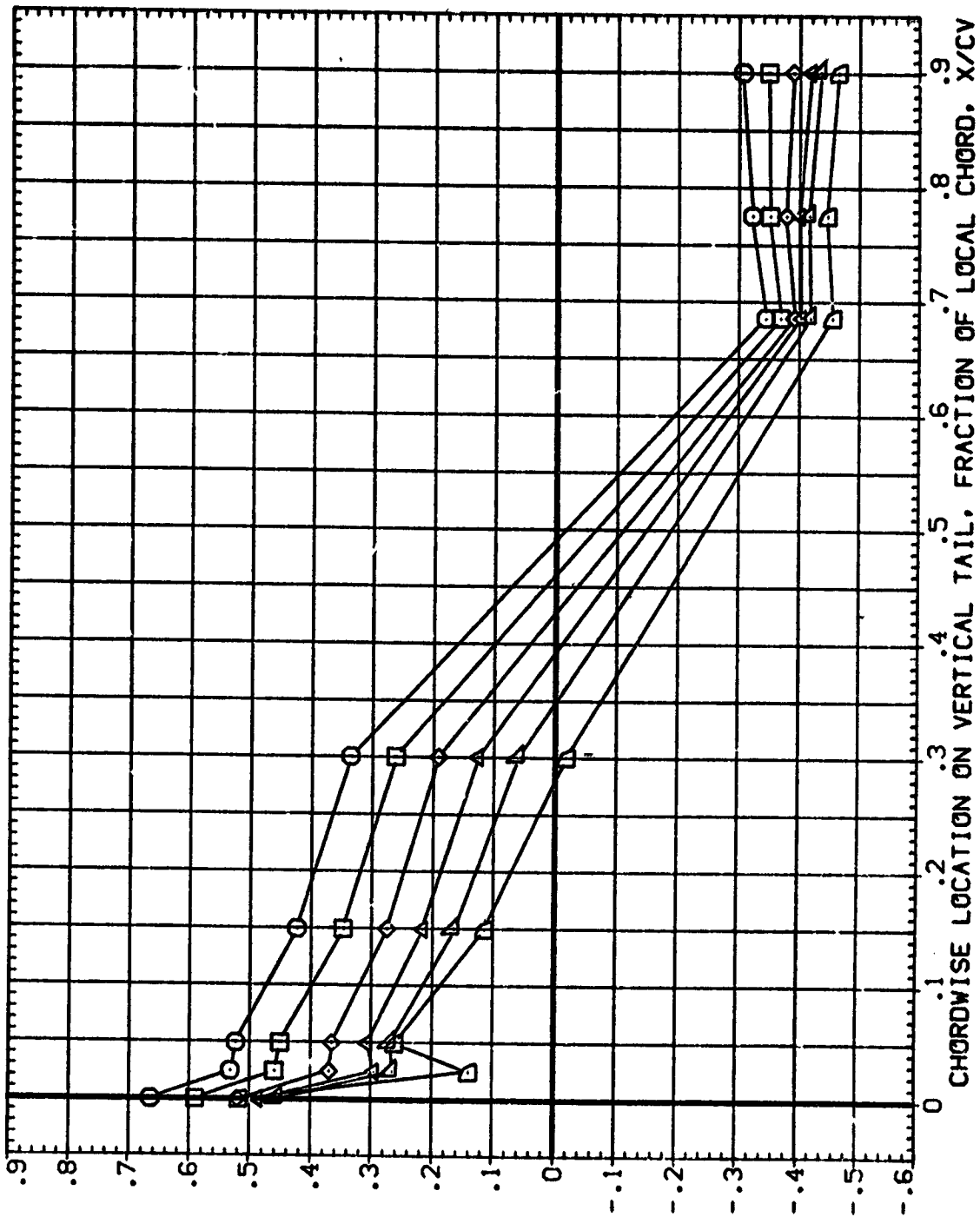


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V23)

SYMBOL
 ▽ ▽ ▽ ▽ ▽
 □ □ □ □ □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV .600
 BETA -4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 L-ELVN .000
 MACH 1.400

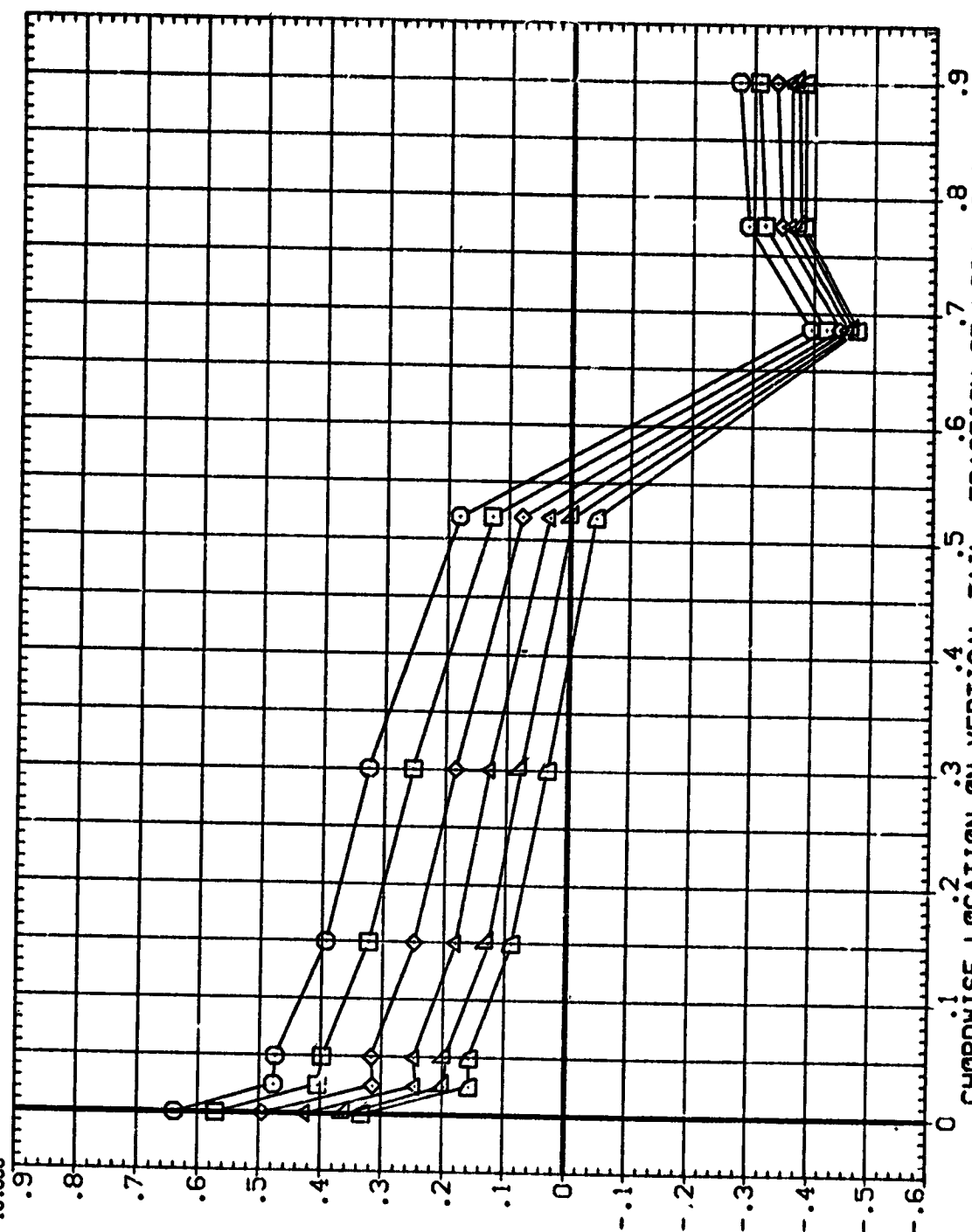


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

(1E8V23)

SYMBOL
□
◇
△
▽
◇
□

ALPHA
-4.000
.000
4.000
8.000
12.000
16.000

Z/BV
.840

BETA
-4.000

PARAMETRIC VALUES
RUDDER .000
BOFLAP .000
R-ELVN .000
SPOBRK .000
L-ELVN .000
MACH 1.400

SURFACE TAP PRESSURE COEFFICIENT, CP

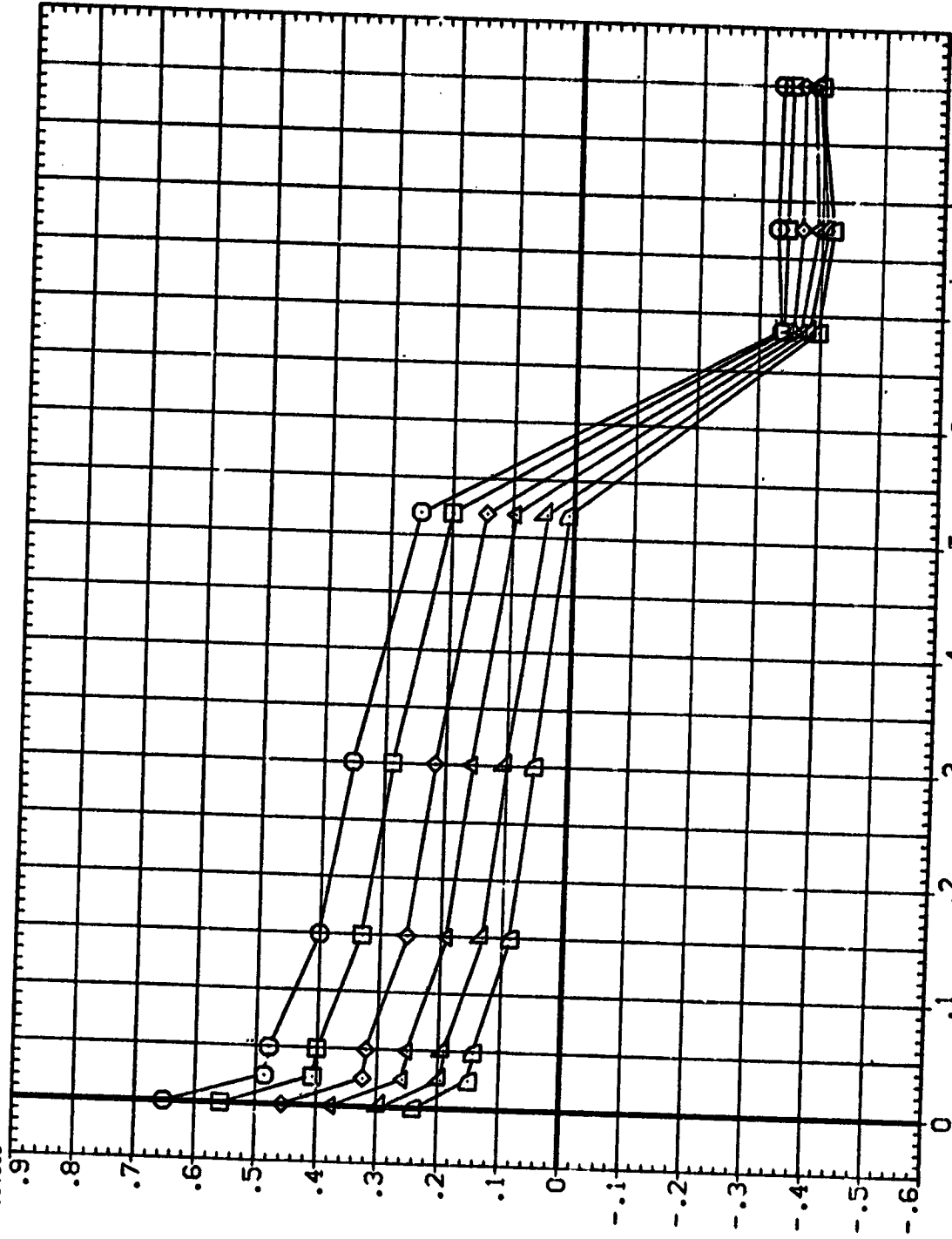


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES
CHORDWISE LOCATION ON VERTICAL TAIL. FRACTION OF LOCAL CHORD. X/CV

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V23)

SYMBOL
 ○
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV
 .925

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000
 SPOBRK .000
 BOFLAP .000
 L-ELVN .000
 R-ELVN .000
 MACH 1.400

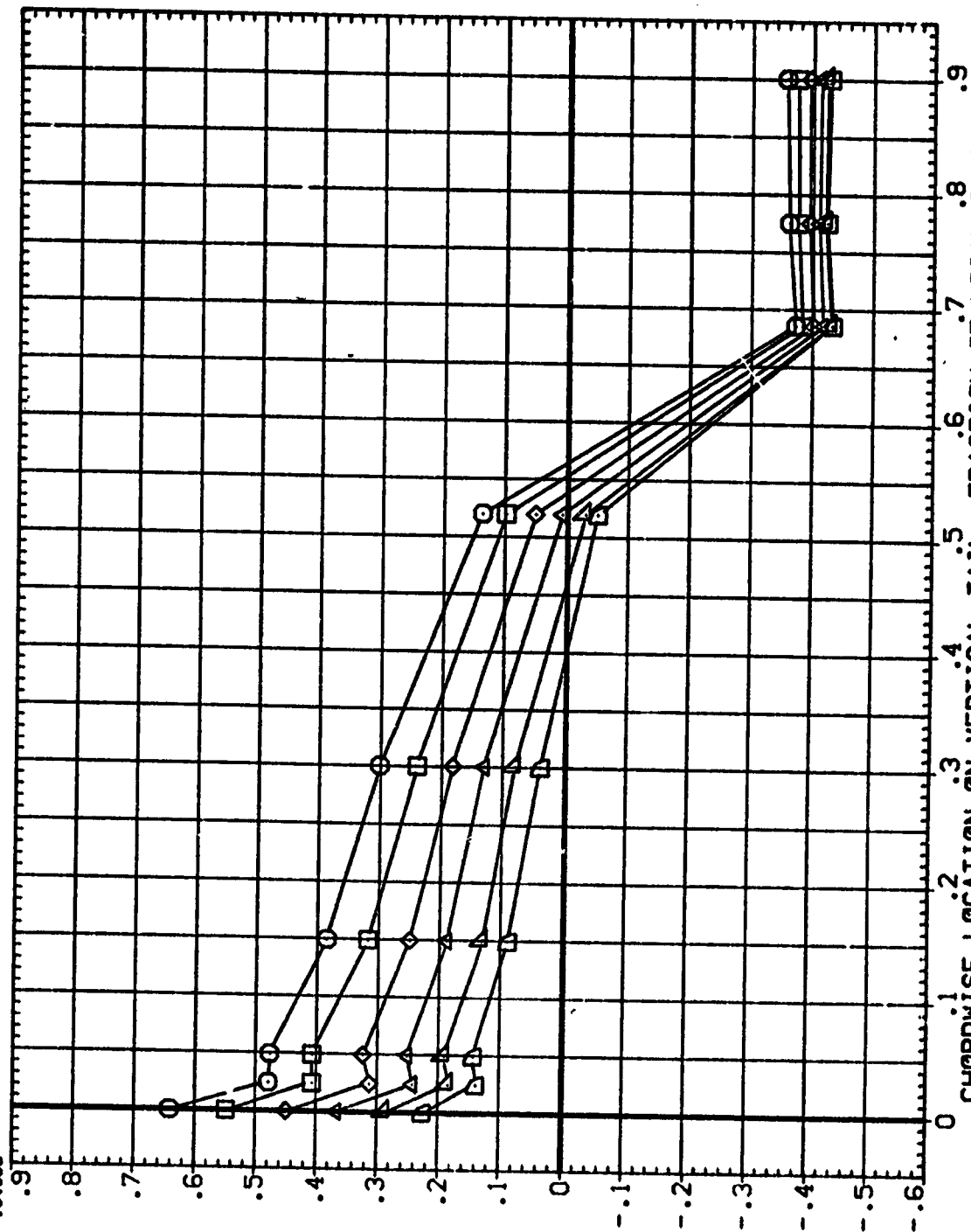


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

(1E8V23)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
○	-4.000	.316	.000	R-DOER
□	.000			SPDBRK
◇	4.000			BOFLAP
△	8.000			L-ELVN
▽	12.000			R-ELVN
▽	16.000			MACH
				.000
				.000
				1.400

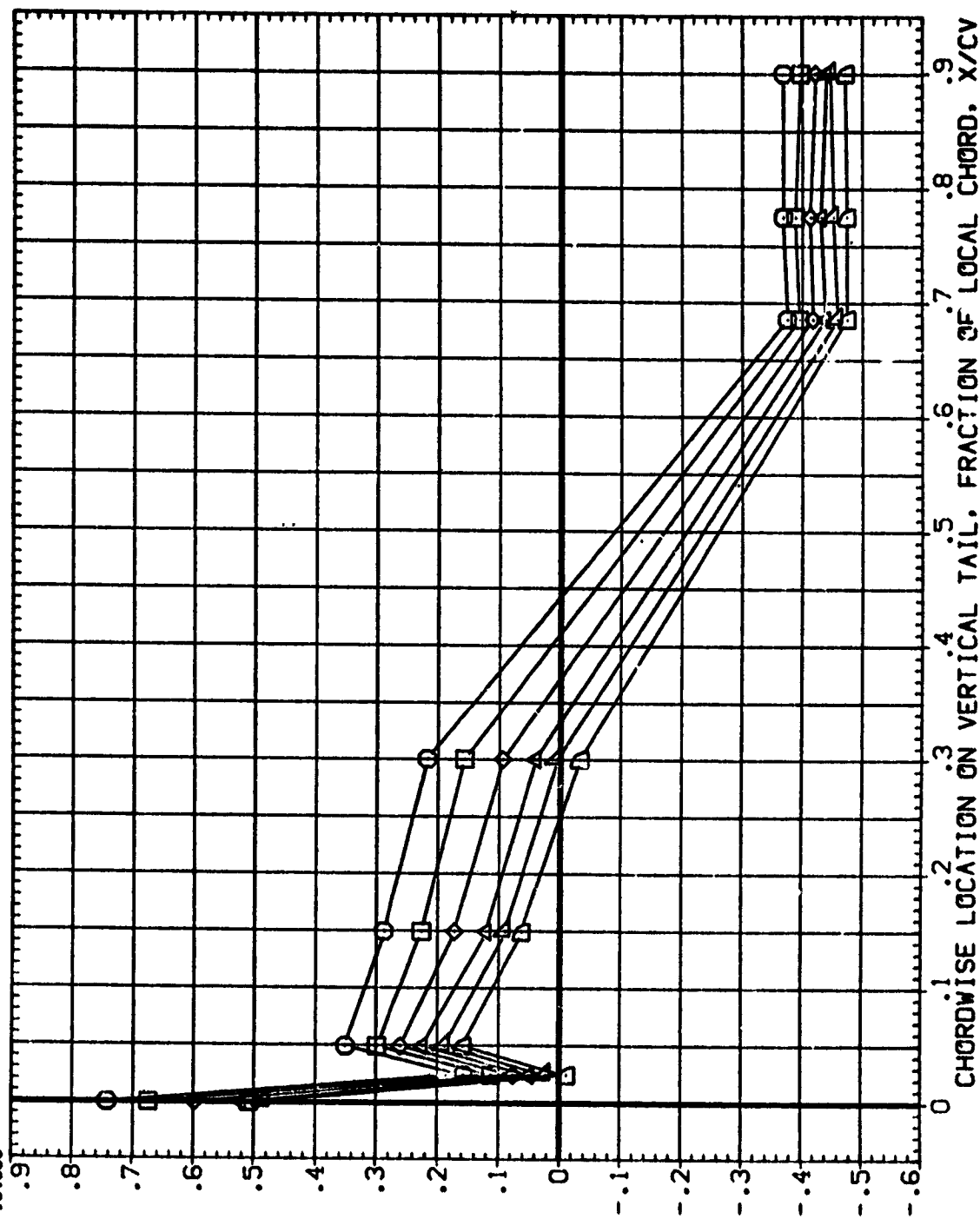


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA Z/BV BETA
 -4.000 .600 .000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □
 ◇
 △
 ▽
 ○

SURFACE TAP PRESSURE COEFFICIENT, CP

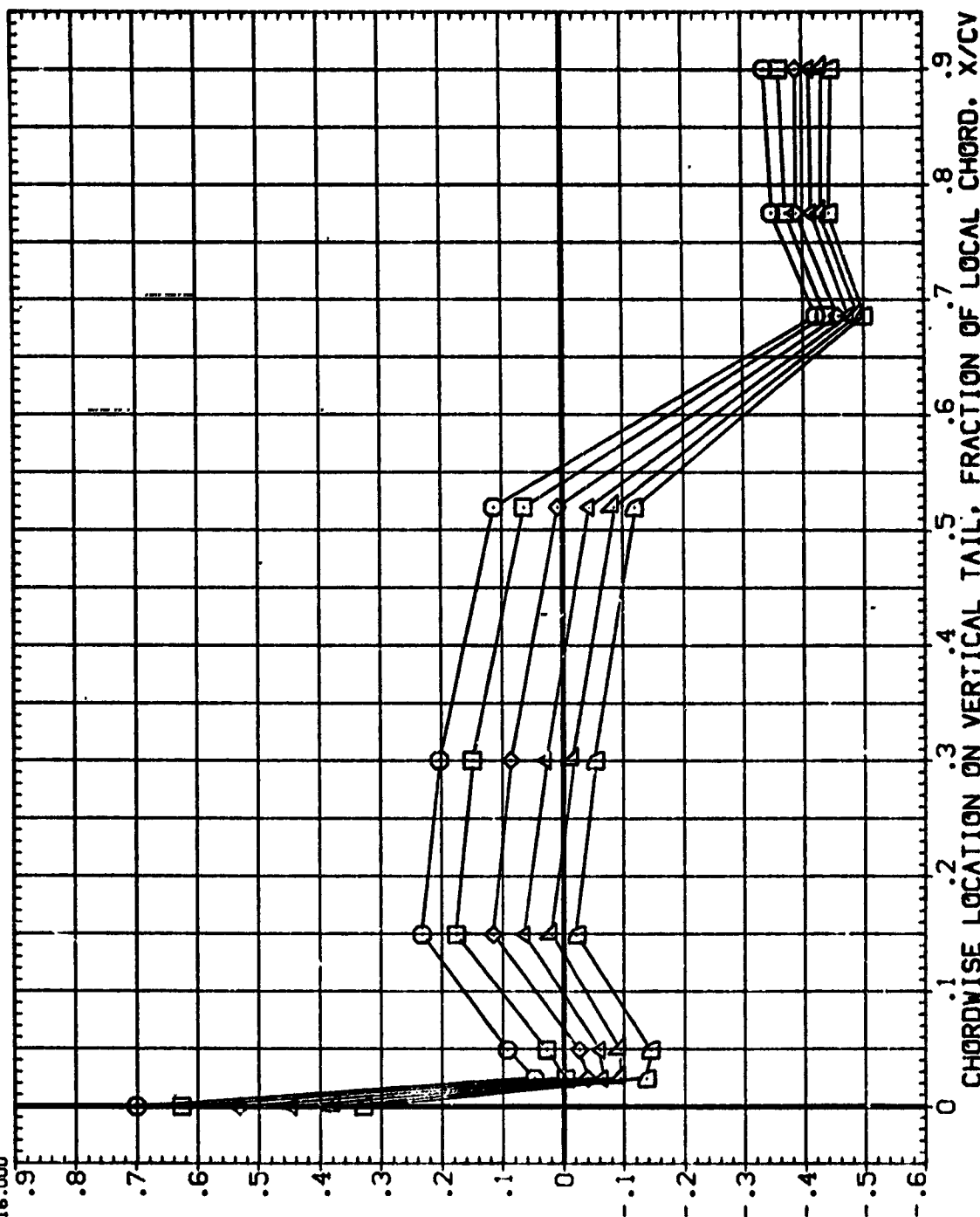


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-C73(CA148) -140A/B/C/R ORB VERTICAL (IE8V23)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES		
○	-4.000	.840	.000	80FLAP	.000		
□	.000			R-ELVN	.000		
◇	4.000				L-ELVN	.000	
▽	8.000				MACH	1.400	
▽	12.000						
▽	16.000						

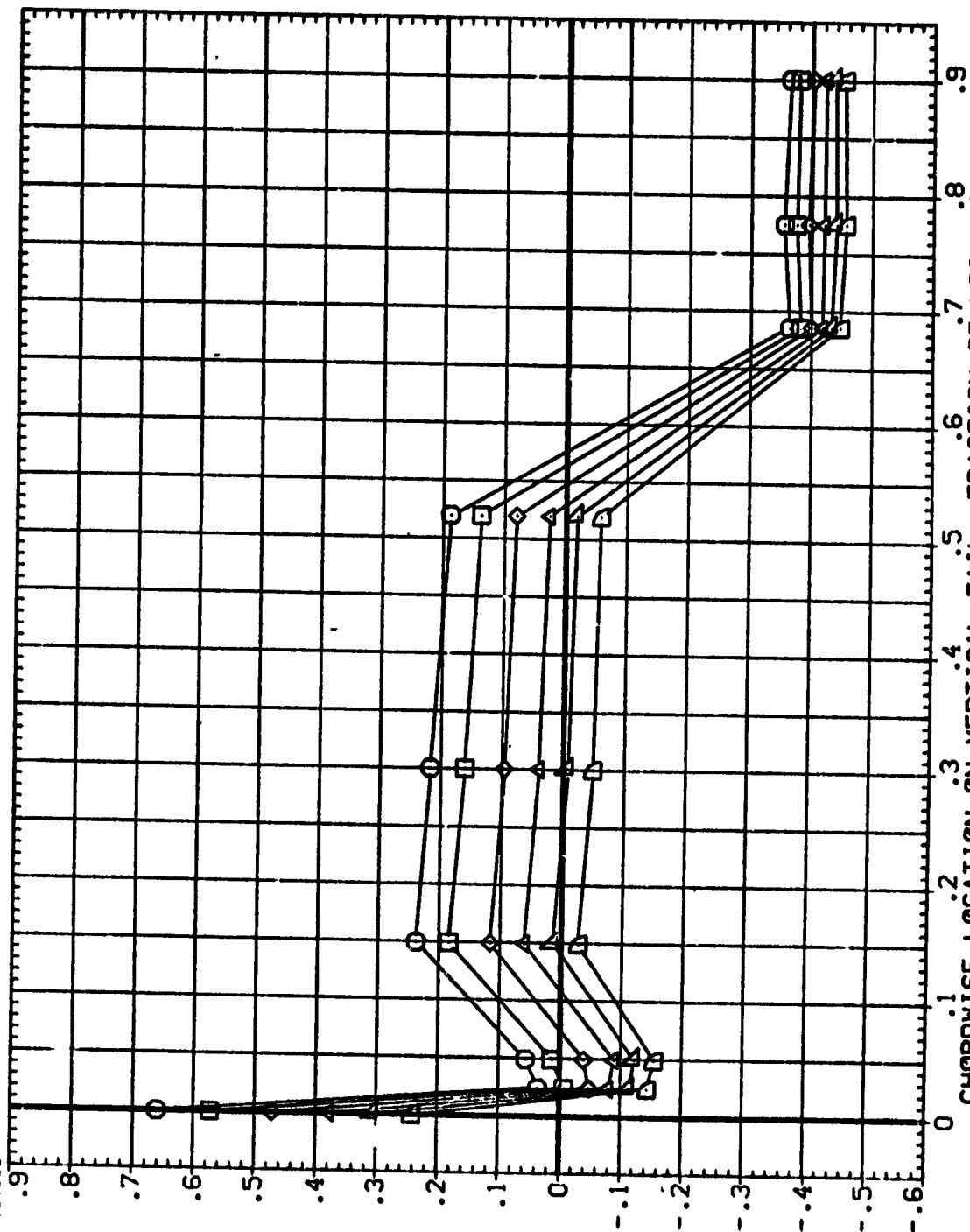


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R GRB VERTICAL (1E8V23)

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 SPDGRK .000
 L-ELVN .000
 MACH 1.400

ALPHA -4.000
 Z/BV .925
 BETA .000

SYMBOL
 ○ □ ◇ △ ▽ ▿

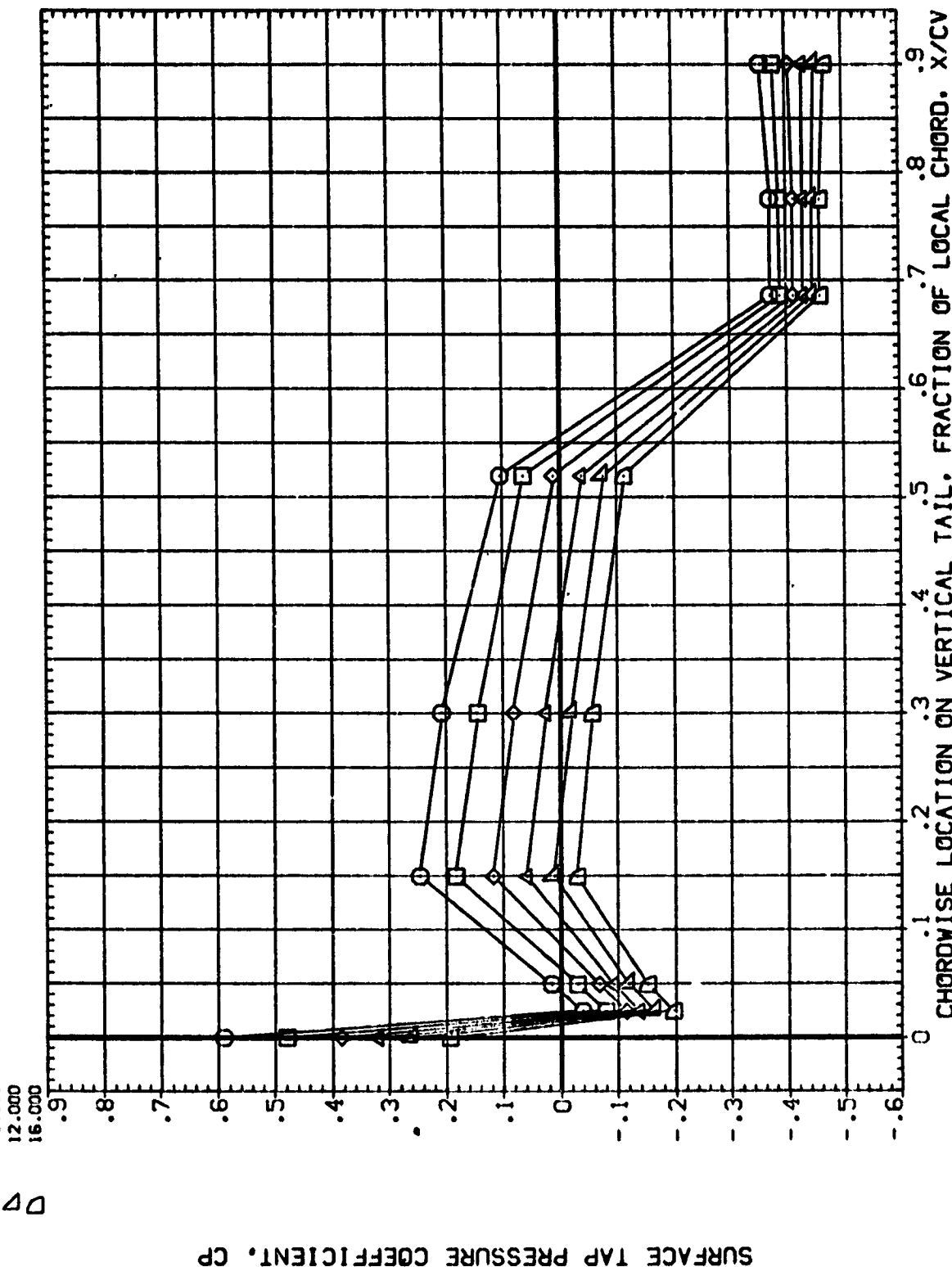


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V23)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRK	L-ELVN	MACH
□	-4.000	.316	4.000	80FLAP	.000	.000	.000
◇	.000			R-ELVN	.000	.000	1.400
△	4.000						
▽	8.000						
□	12.000						
◇	16.000						

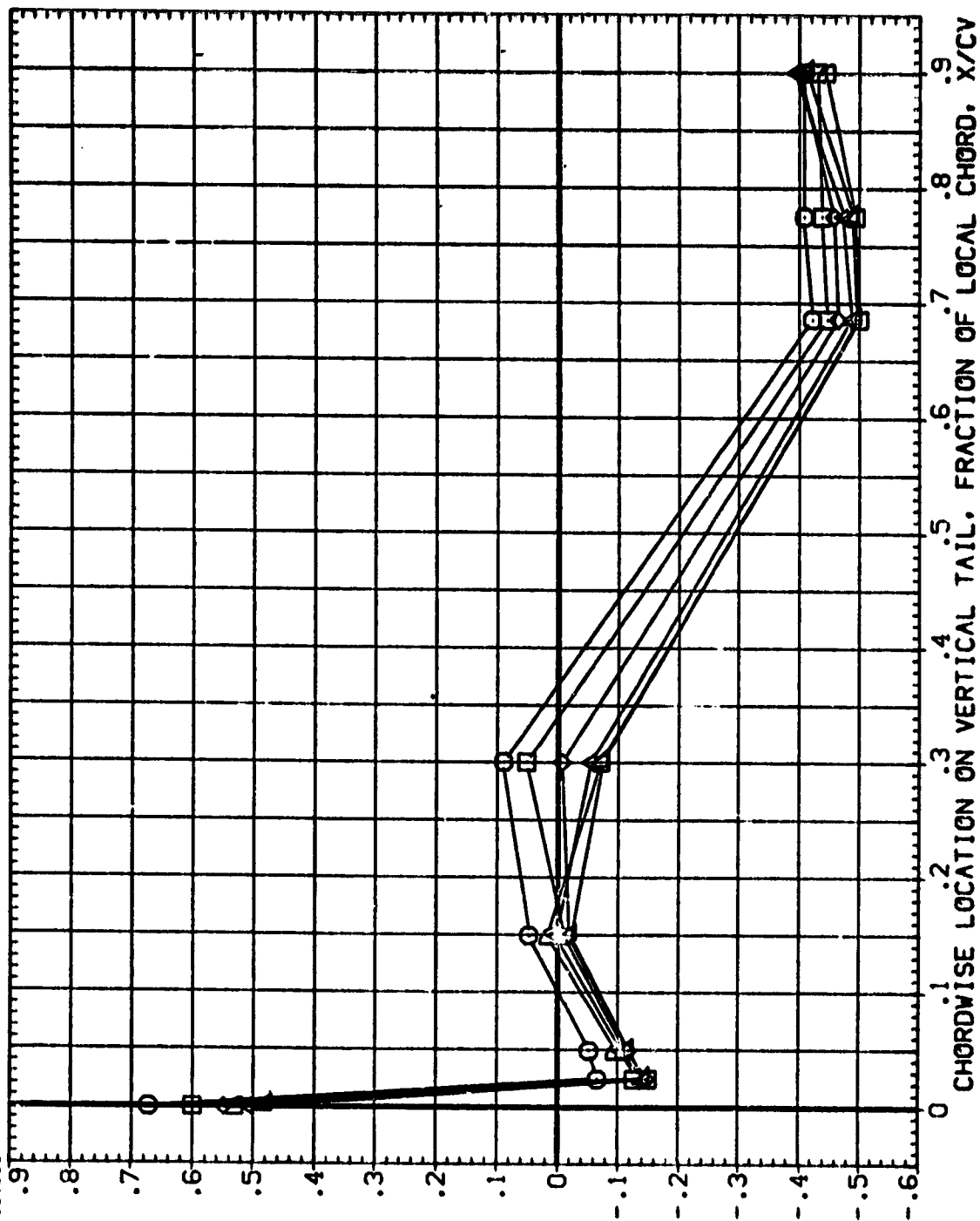


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V23)

SYMBOL
 ▽
 ▴
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV
 .500

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000
 SPOBRK .000
 BOFLAP .000
 R-ELVN .000
 L-ELVN .000
 MACH 1.400

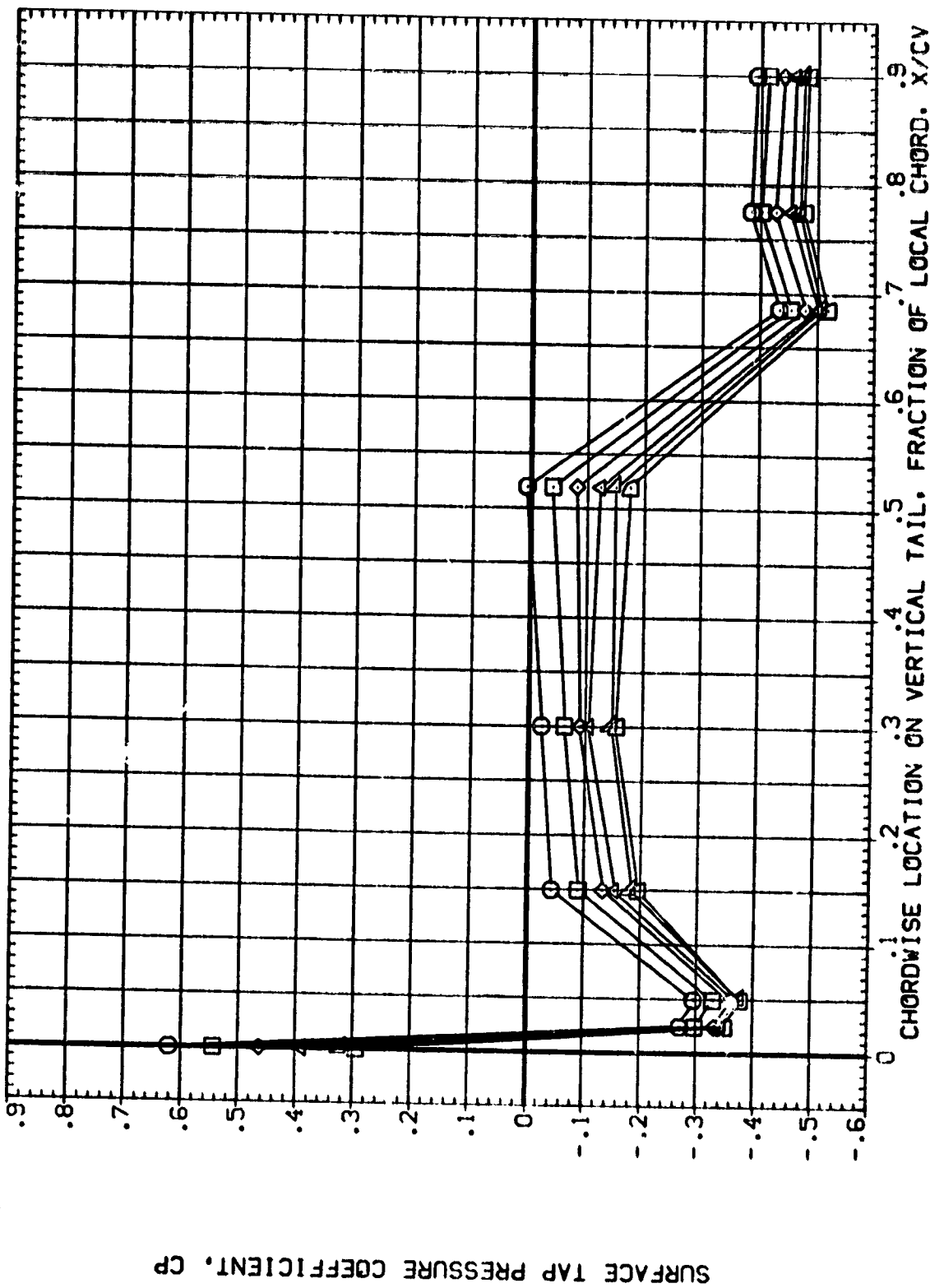


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-0730A148J -140A/B/C/R ORB VERTICAL (IE8V23)

SYMP 3L
 C
 D
 D
 D
 D

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV .840
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDBRX .000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

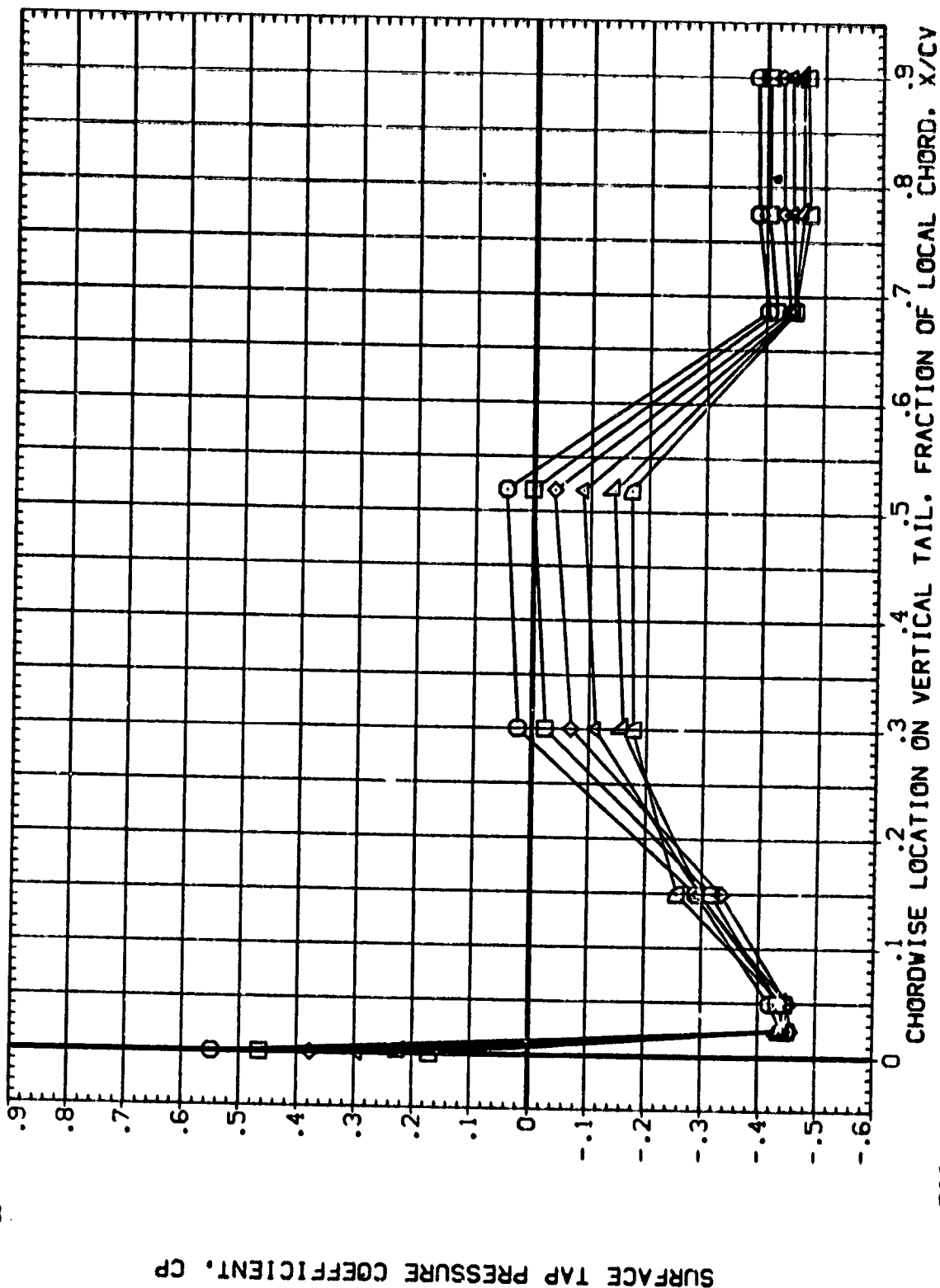


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

(1E8V23)

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

SYMBOL
 □ ▽ ◇ ◊ ▴ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV
 .925

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPEEDBRK .000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

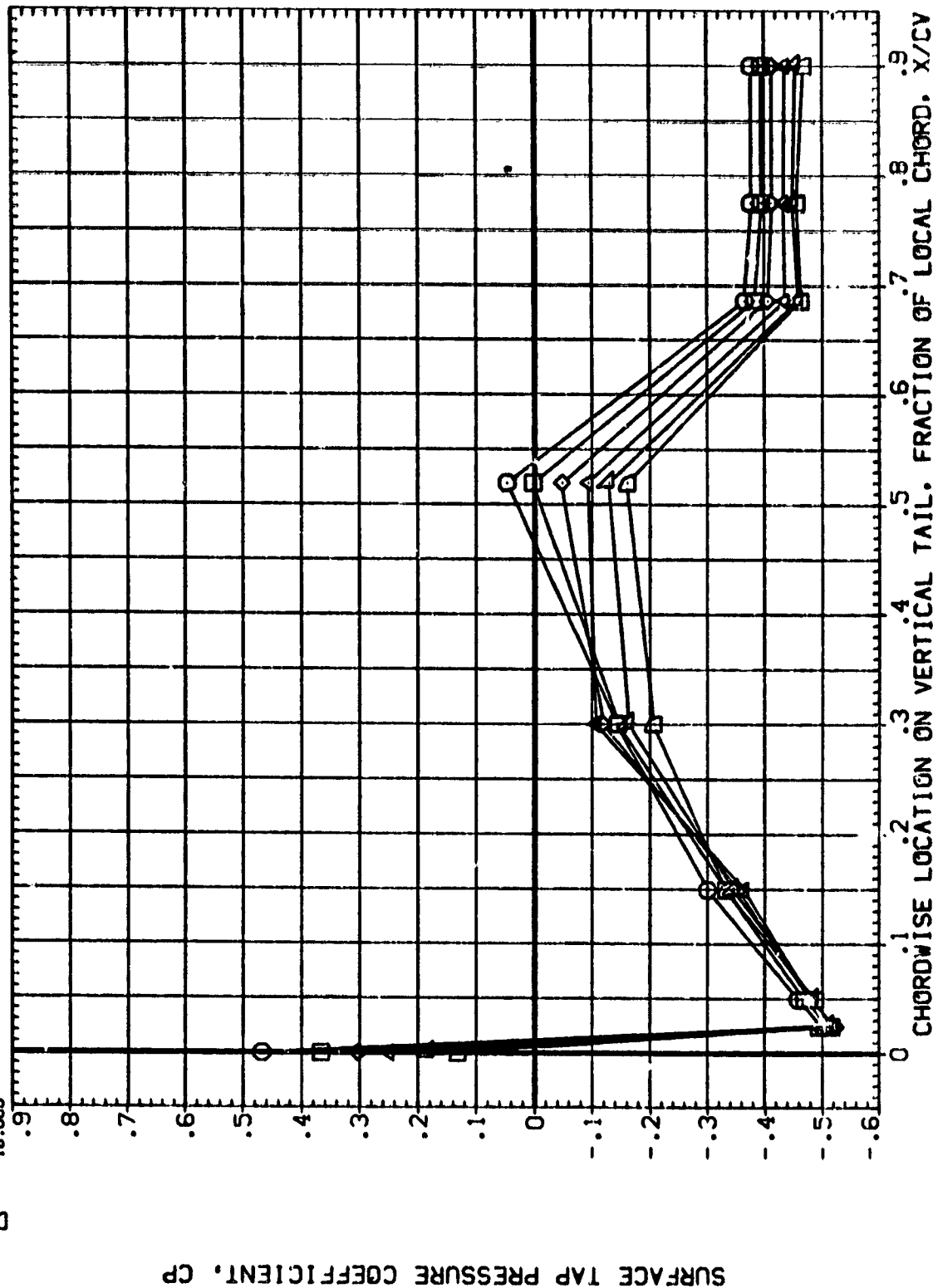


FIG. 13 VERTICAL TAIL SPEEDBRAKE DEFLECTION 0 DEGREES

AMES 11-0730CA148: -140A/B/C/R GRB VERTICAL (IE8V17)

SYMBOL
 □
 ◇
 △
 ▼

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .316
 BETA -8.000

PARAMETRIC VALUES
 RUDDER .000 SPEEDK 35.000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .500

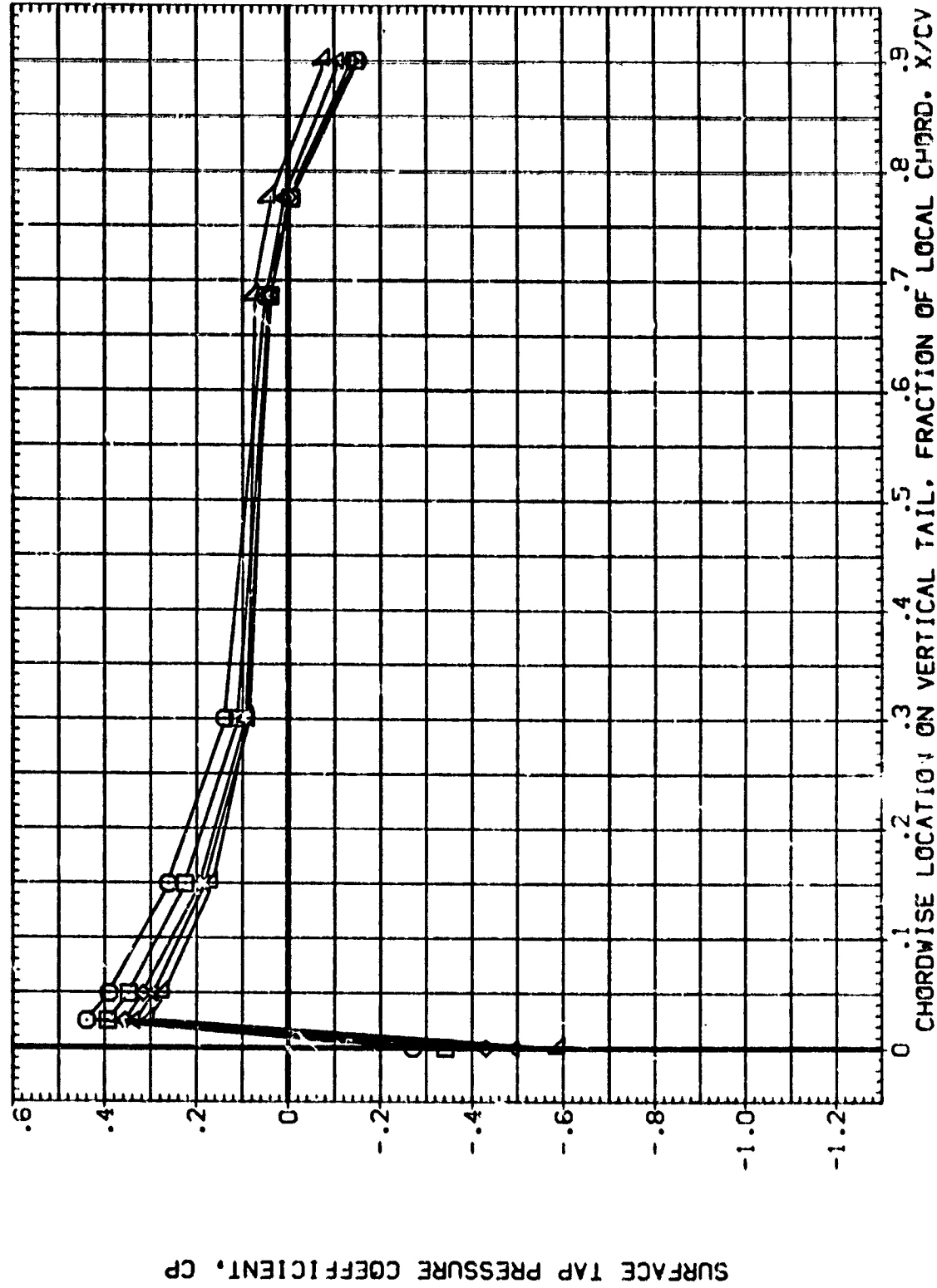


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

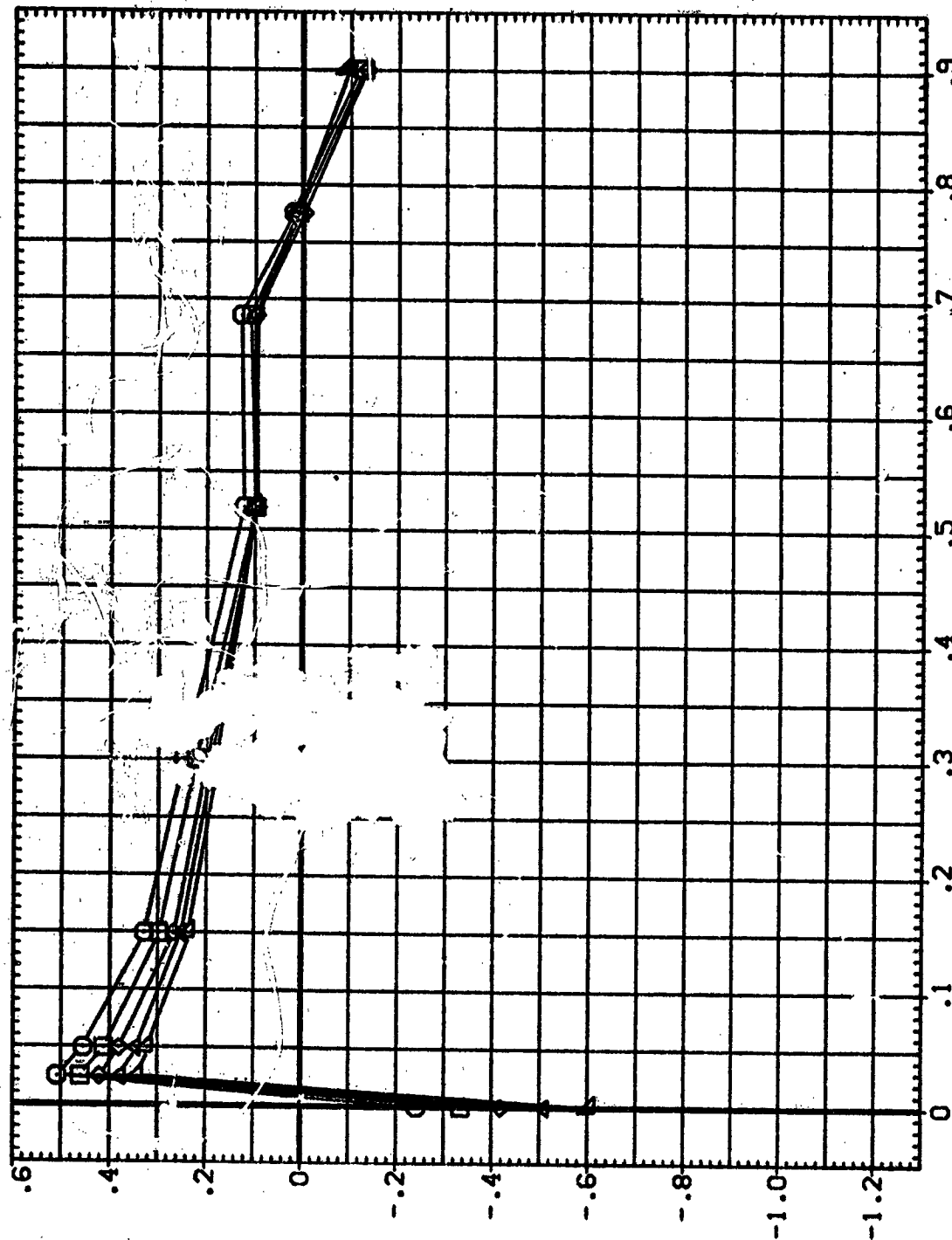
SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/CV
 .600

BETA
 -8.000

PARAMETRIC VALUES
 RUDDER .000 SPEEDRK 35.000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600



SURFACE TAP PRESSURE COEFFICIENT, CP

CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

2-8

AMES 11-073(GA148) -140A/B/C/R ORB VERTICAL (IEBV17)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
○	-4.000	.840	-8.000	RUDER .000
◇	.000			SPDBRK .000
◇	4.000			BOFLAP .000
◇	8.000			L-ELVN .000
◇	12.000			R-ELVN .000
				MACH .600

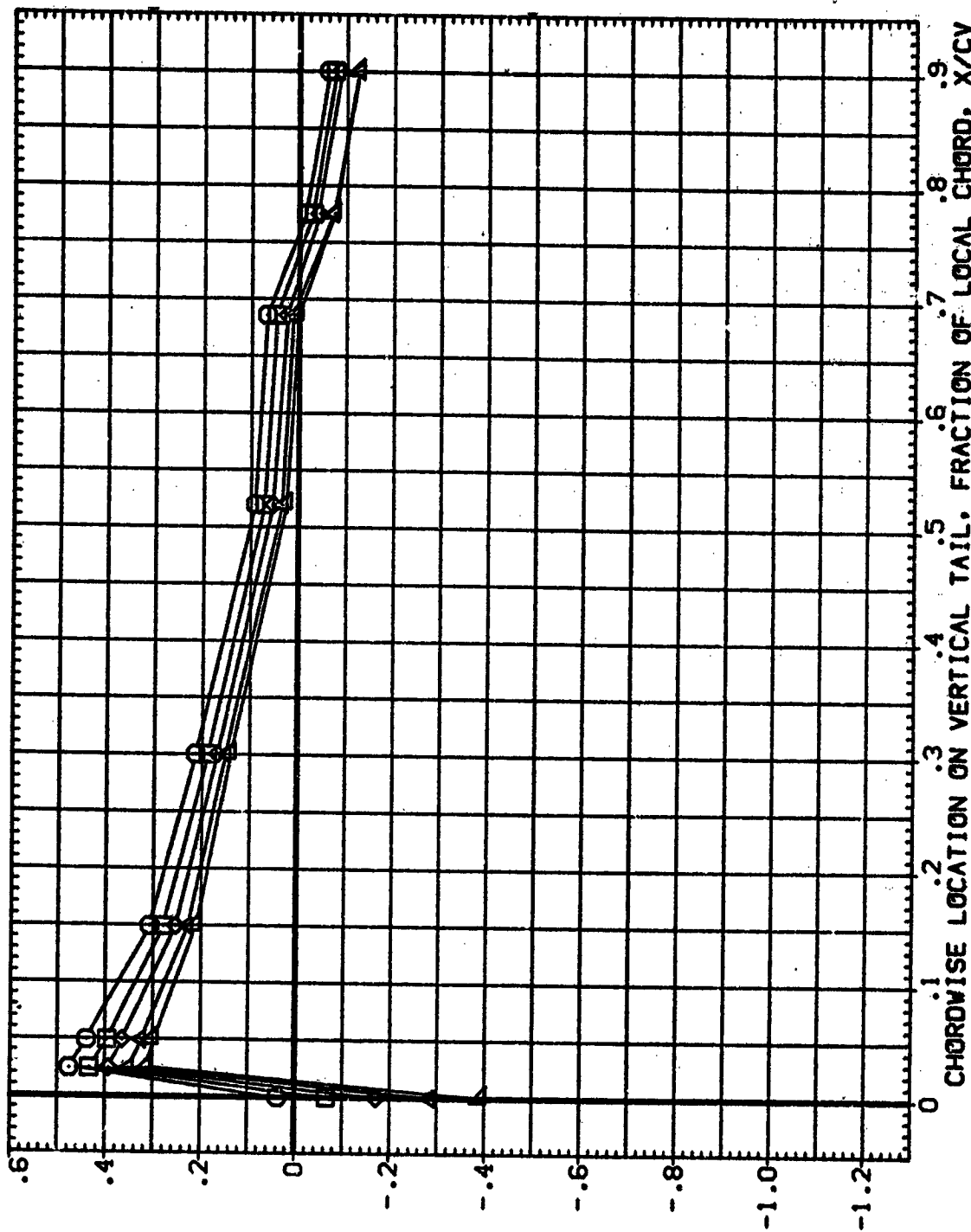


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES.

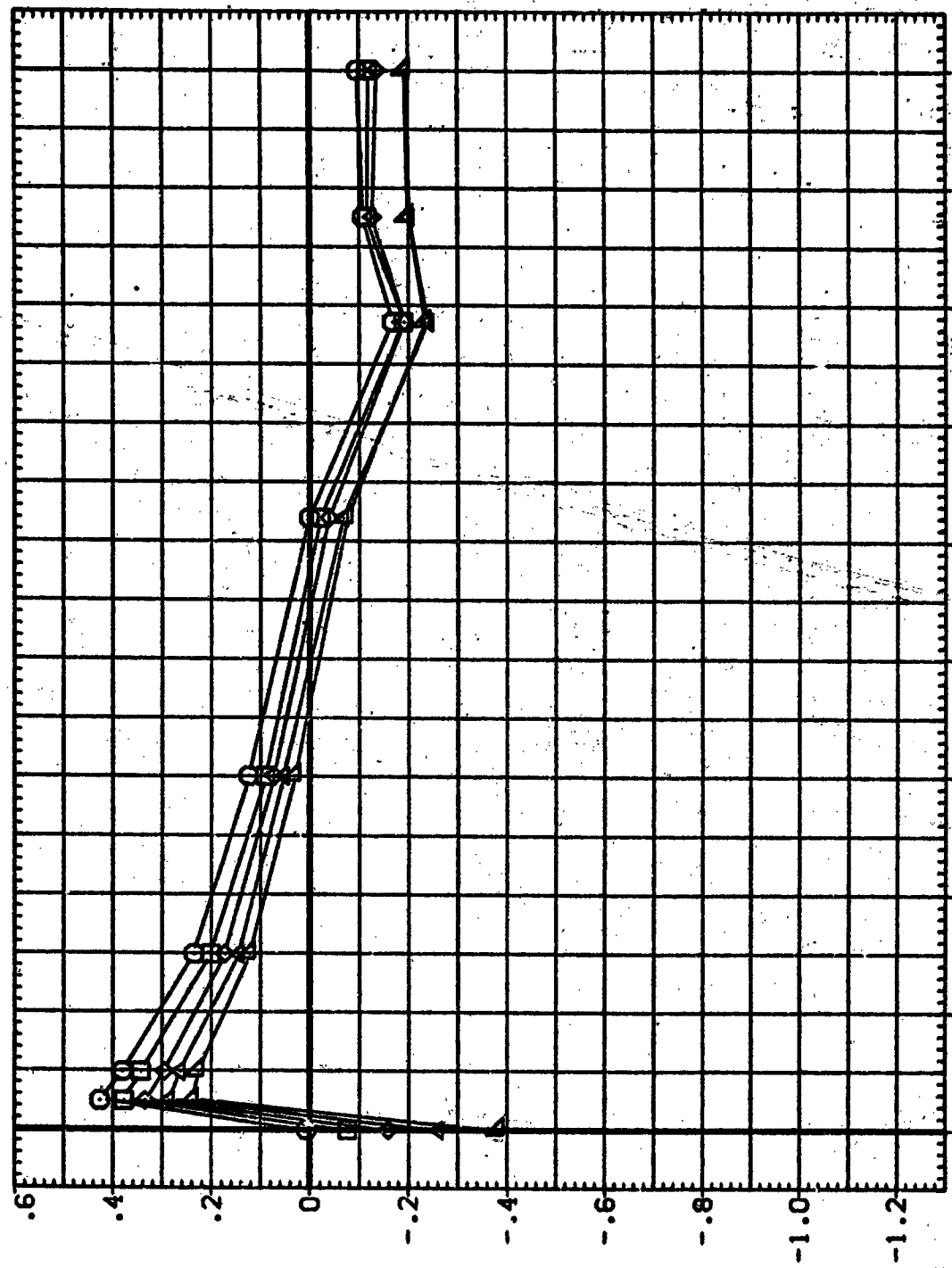
AMES 11-073(OA148) -140A/B/C/R ORB VERTICAL (IE8V17)

PARAMETRIC VALUES
 RUDDER .000 SPOBRK .35.000
 ROFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

VA Z/BV BETA
 .000 .925 -8.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽
 ◊
 ◻
 ◊
 ▽

SURFACE TAP PRESSURE COEFFICIENT, CP



CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V17)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BY BETA
 .316 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPEEDSK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 NACH .600

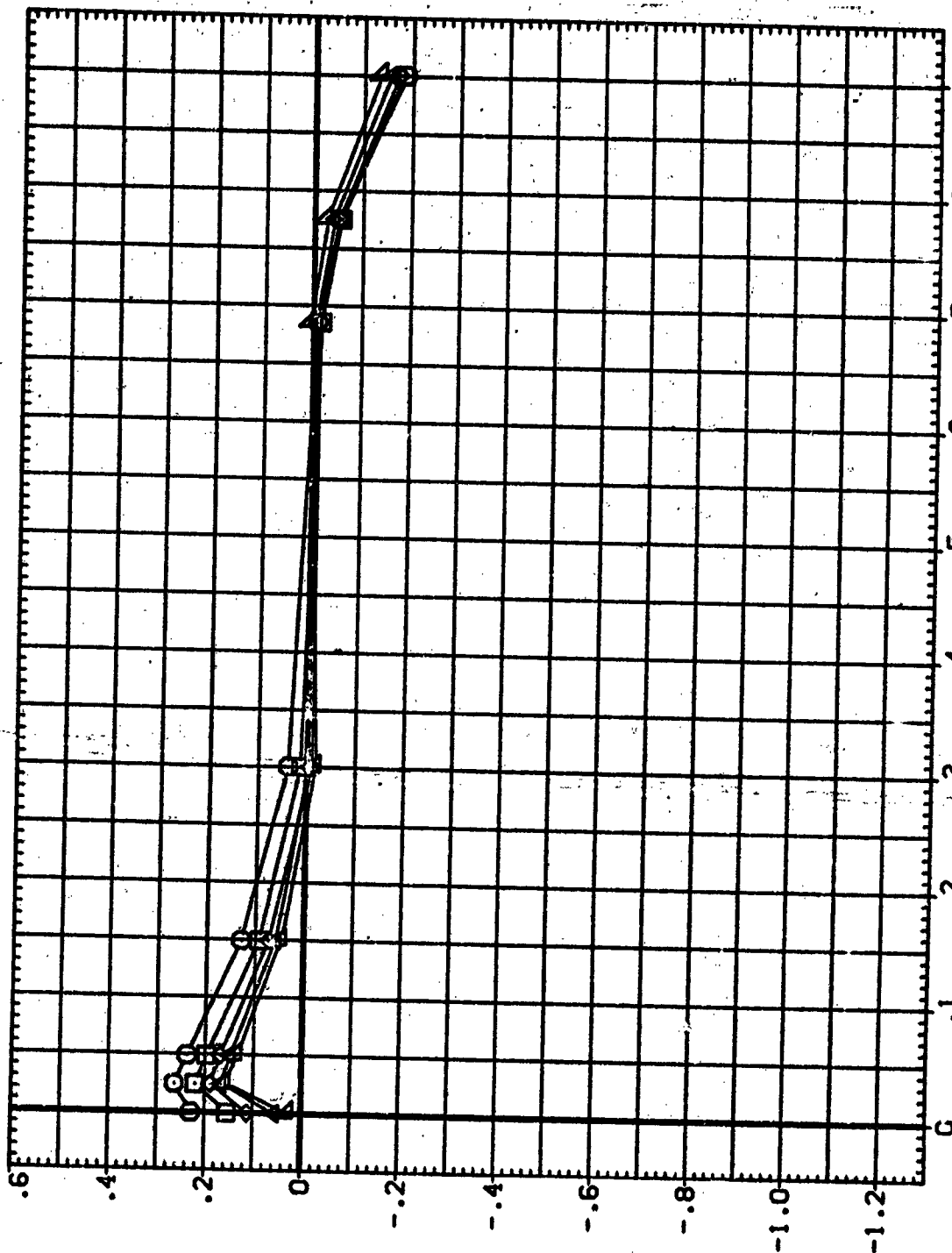


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 T-ELVN .000 MACH .600

ALPHA Z/BV BETA
 -4.000 .600 -4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◊ □ ▴

SURFACE TAP PRESSURE COEFFICIENT, CP

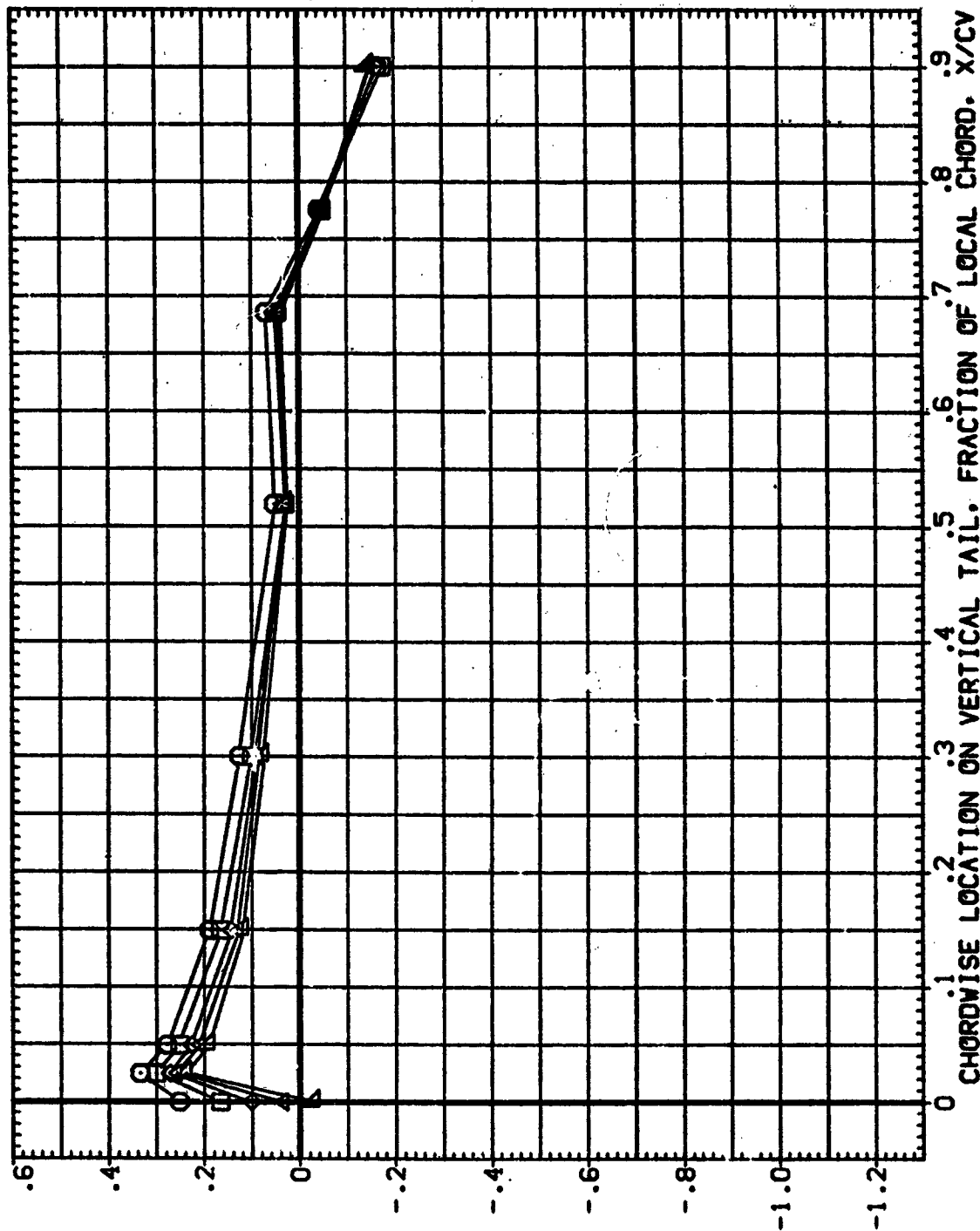
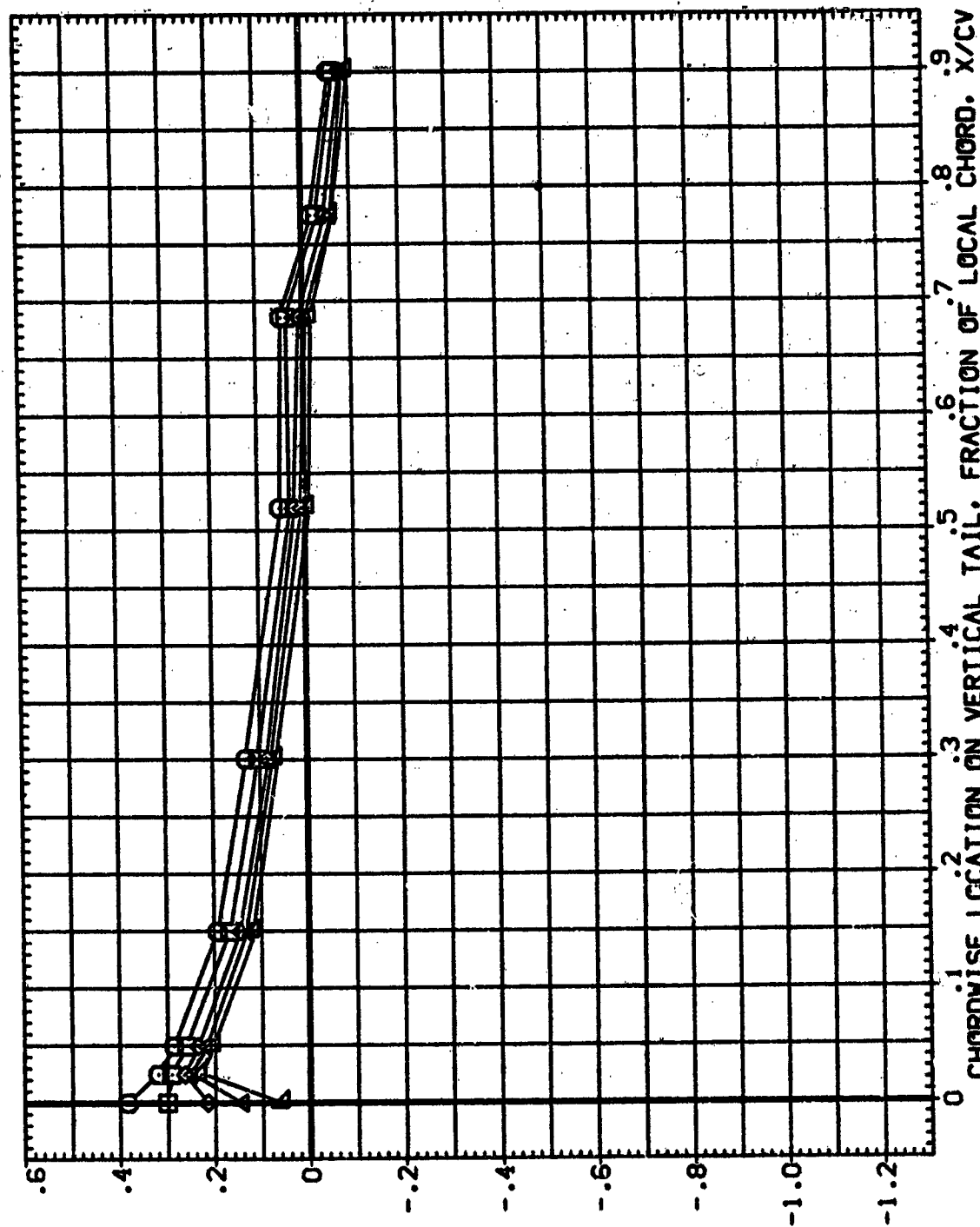


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V17)

PARAMETRIC VALUES
 RUDDER .000 SPEEDBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

SYMBOL ALPHA Z/BV BETA
 -4.000 .840 -4.000
 .000
 4.000
 8.000
 12.000



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V17)

SYMBOL
 ▽
 ◇
 □
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .525

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

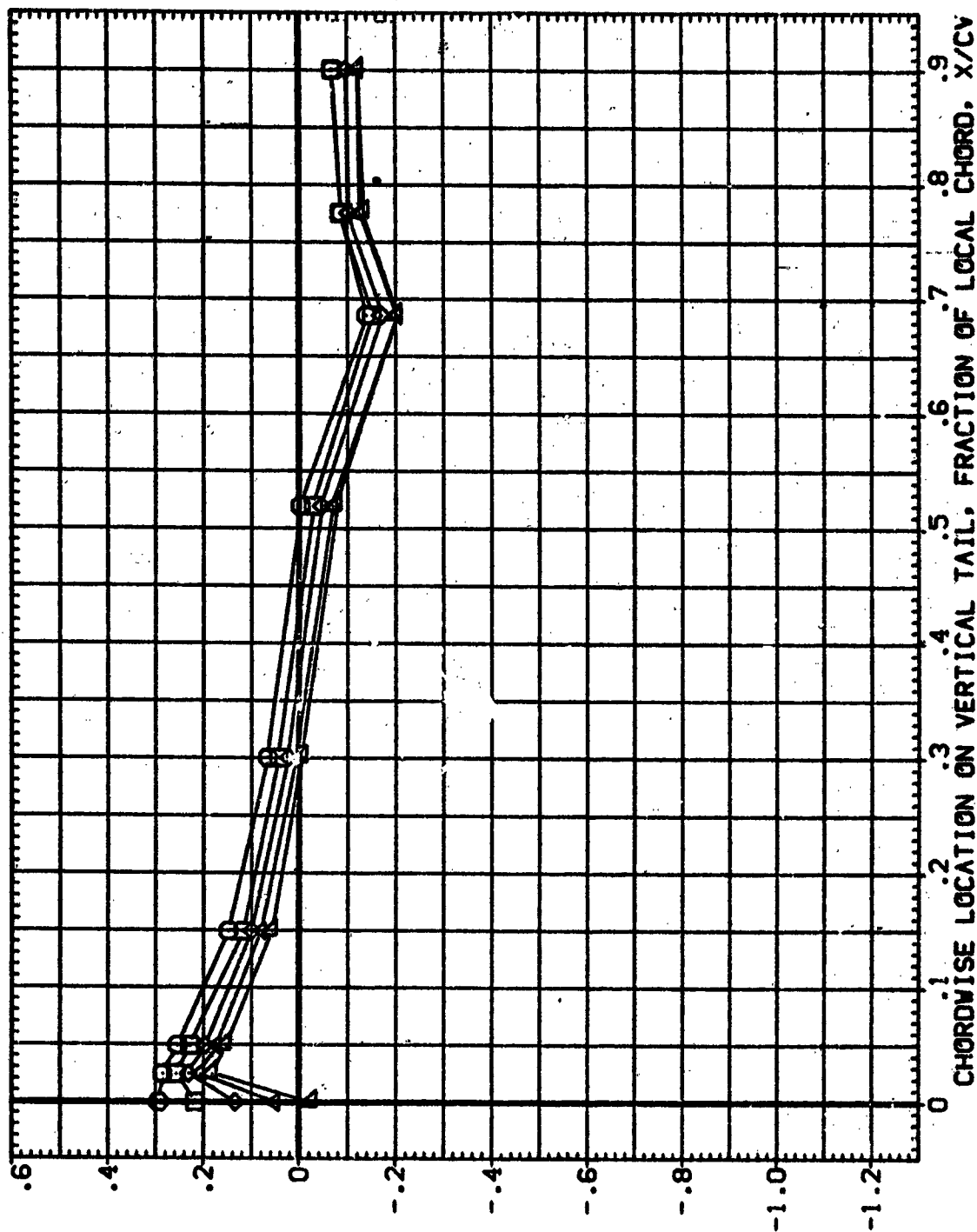


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V17)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
□	-4.000	.316	.000	RUDDER
□	.000			BOFLAP
◇	4.000			R-ELVN
◇	8.000			L-ELVN
△	12.000			MACH
				35.000
				.000
				.600

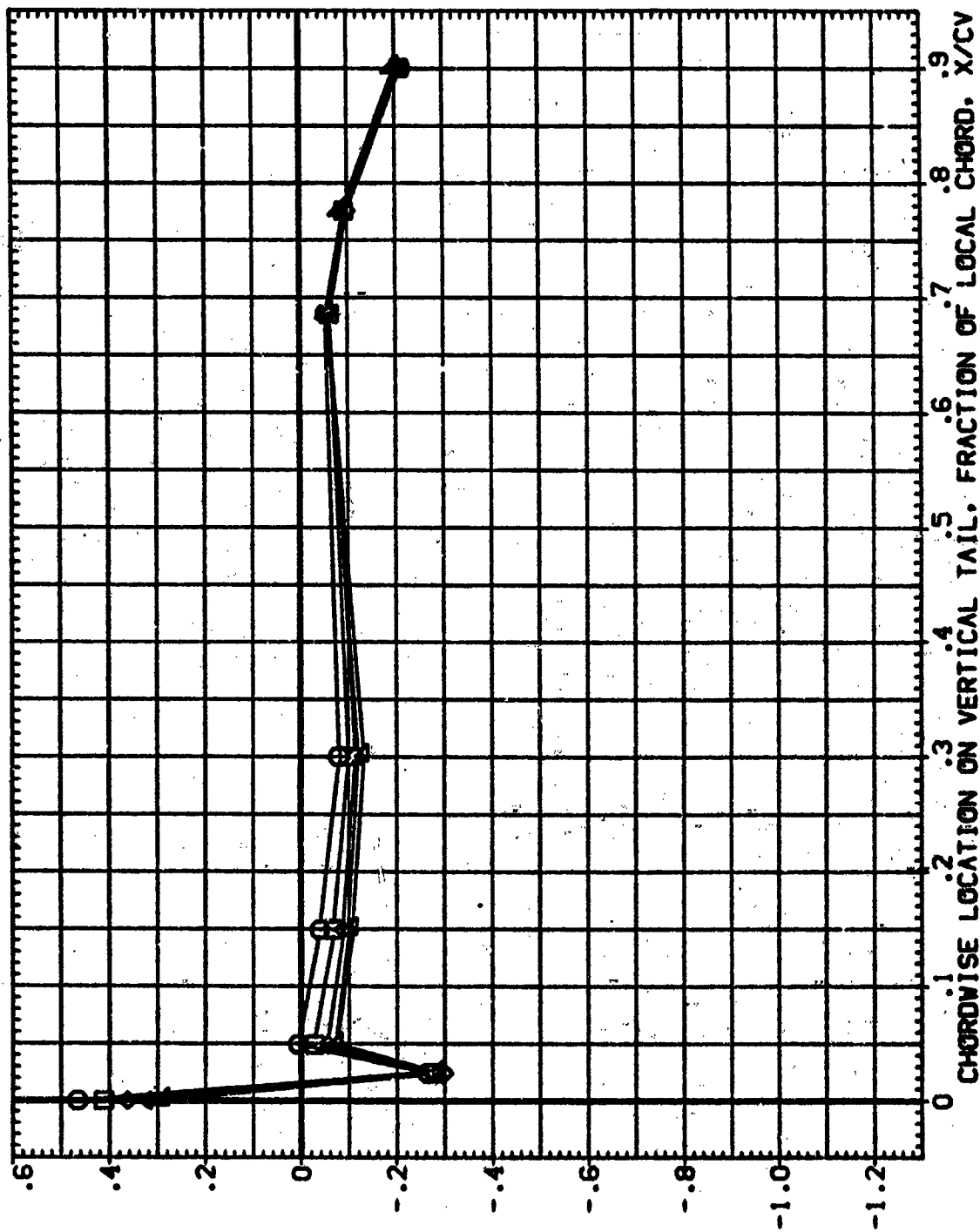


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V17)

SYMBOL
 ▽
 ◇
 □
 ◻
 ◻
 ◻

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600
 .000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPEEDK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 NACH .600

SURFACE TAP PRESSURE COEFFICIENT, CP

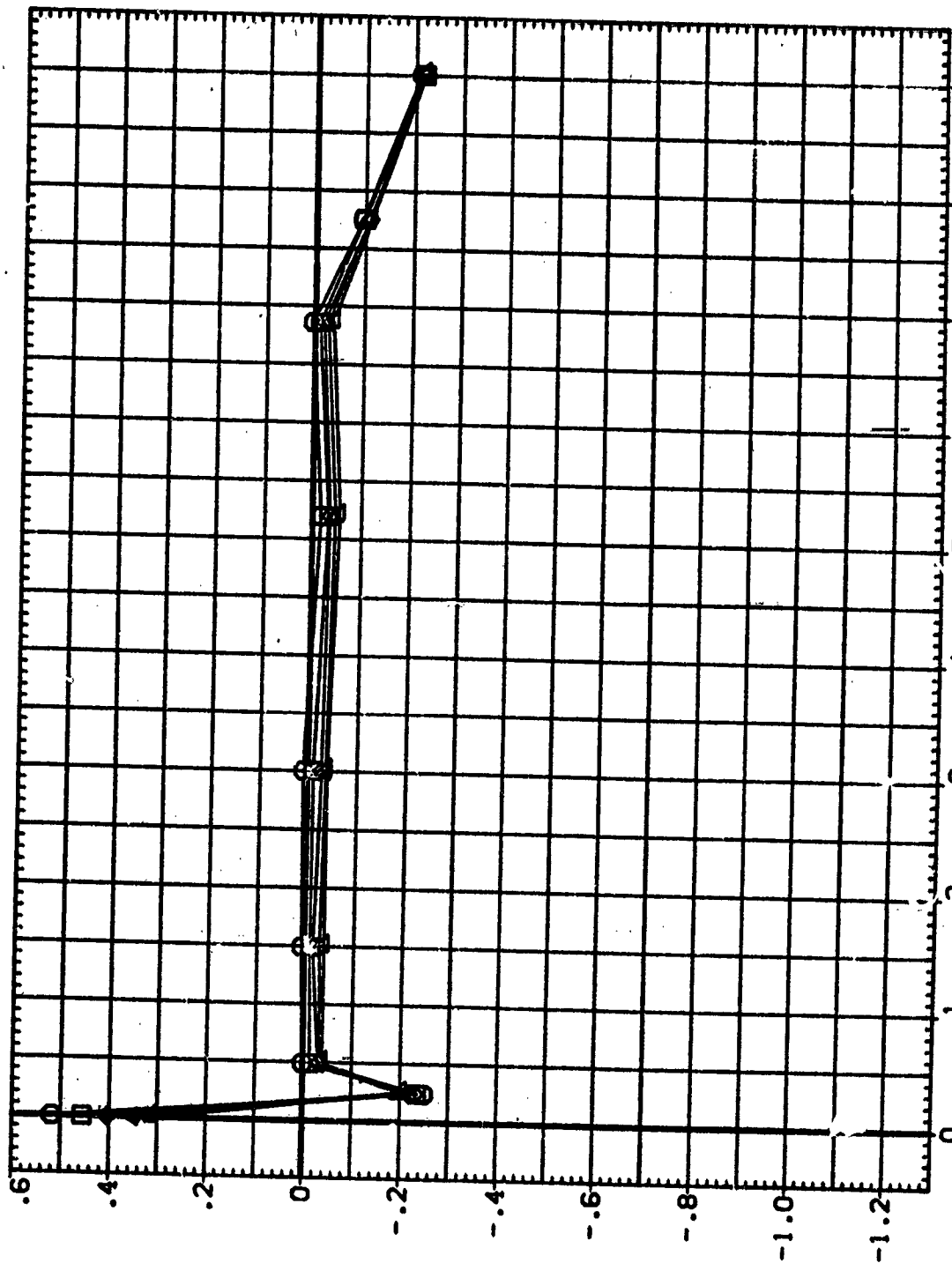


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

(1E8V17)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .840

BEYA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK .000
 SOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

15.000
 .000
 .600

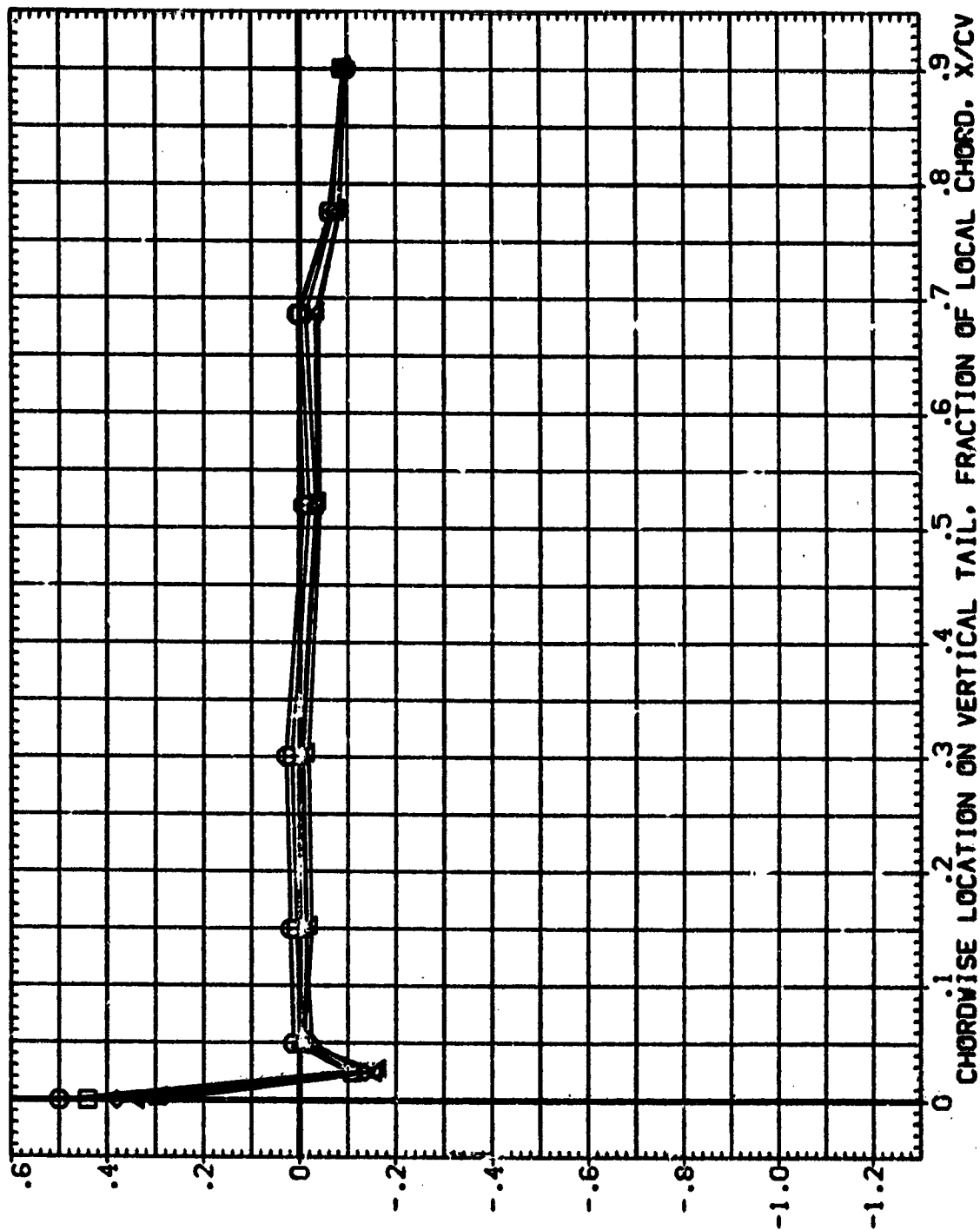


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V17)

SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .925
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

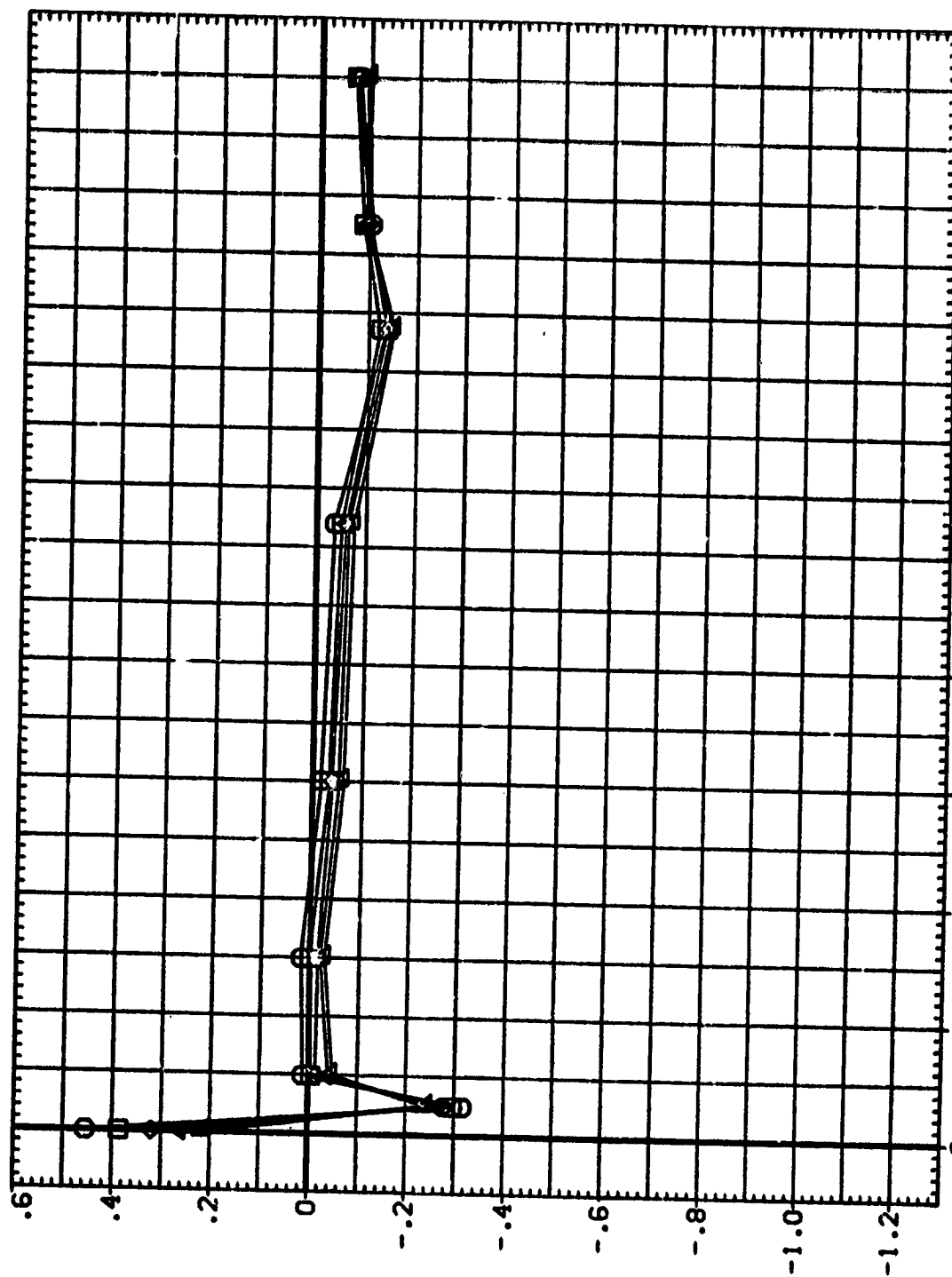


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

(IE8V17)

SYMBOL
 ▽
 ◇
 □

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z-BV .316
 BETA 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

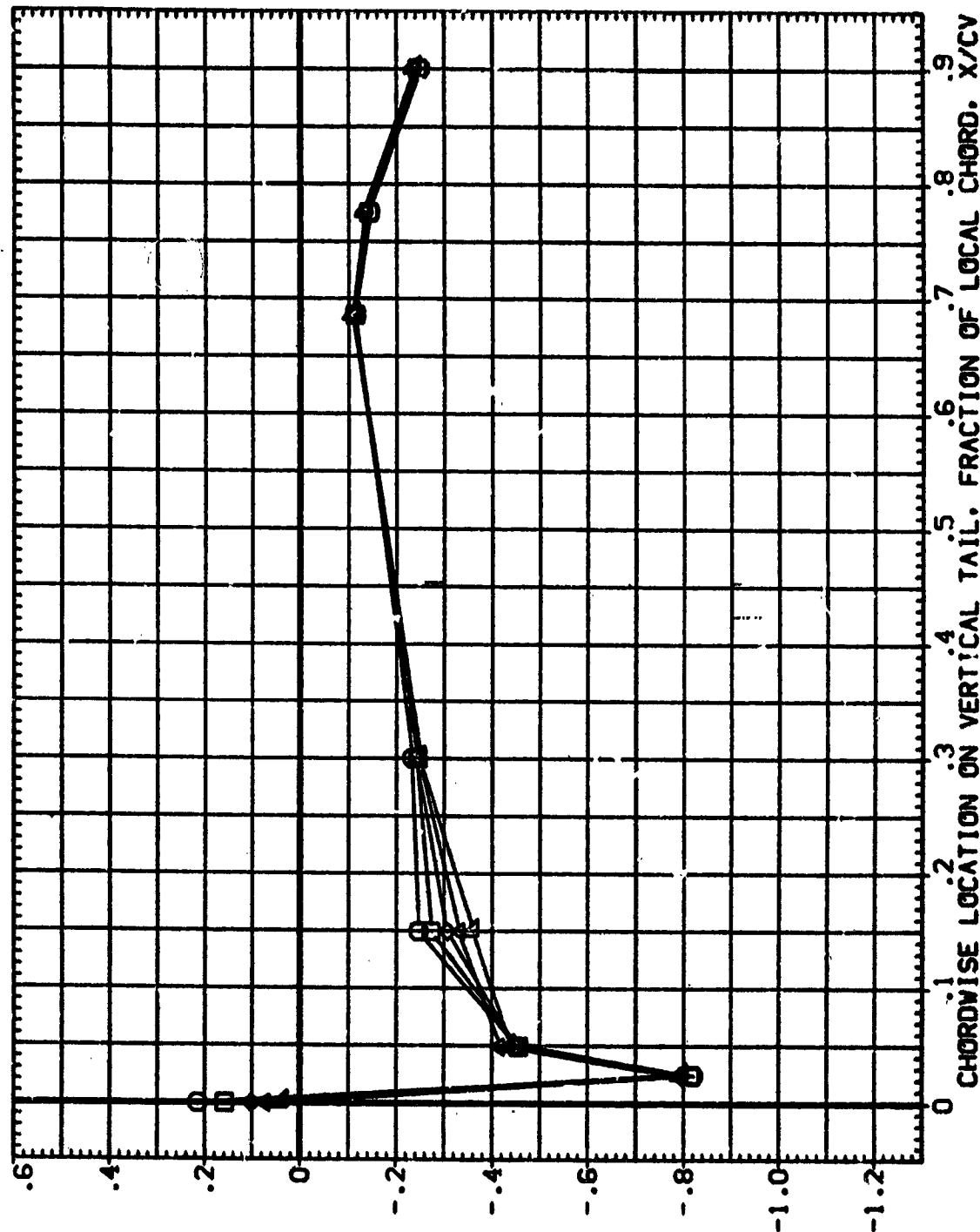


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 □
 ◇
 △
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

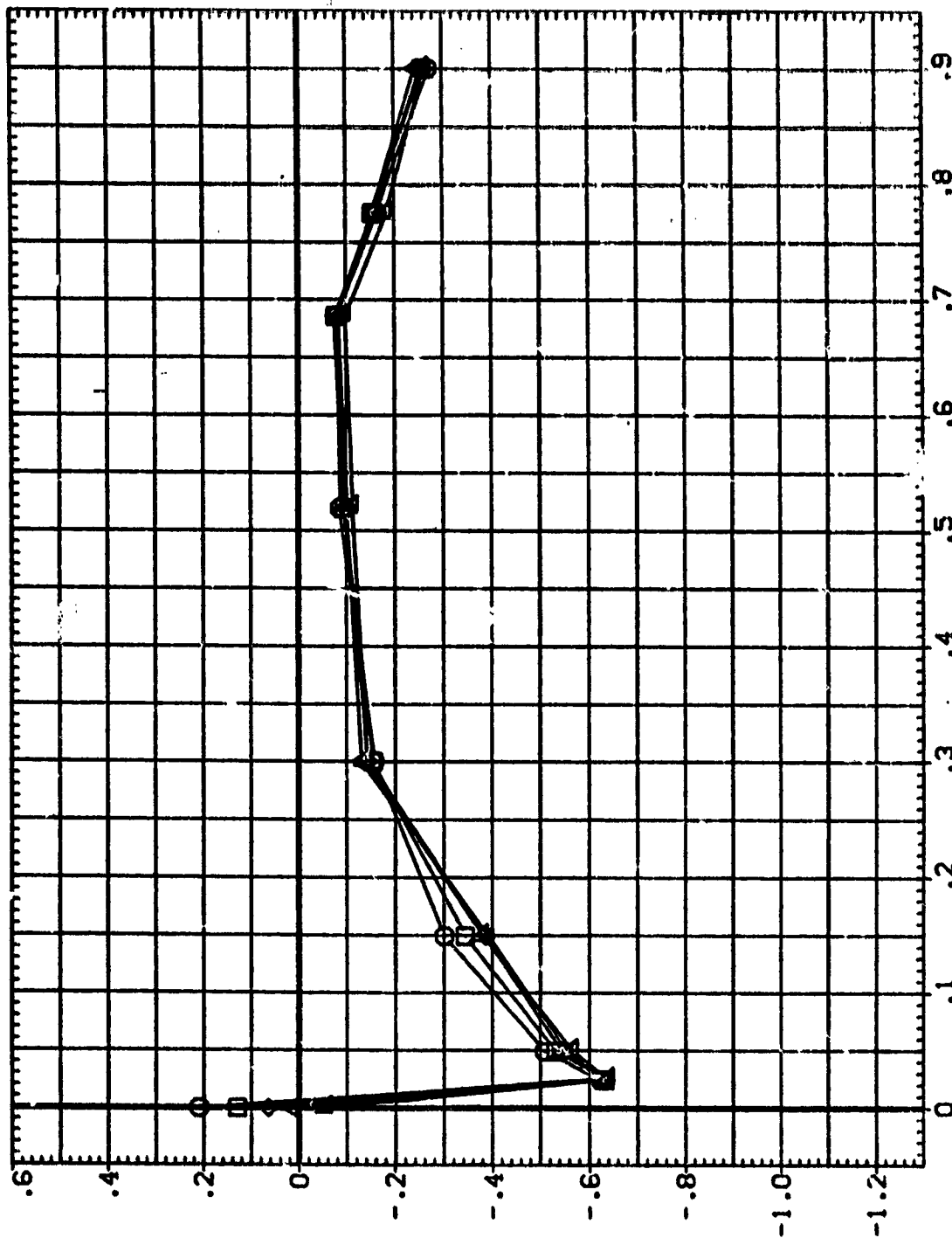


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V17)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
▽	-4.000	.843	4.000	.000	SPOBRK 35.000
◇	.000			.000	L-ELVN .000
□	4.000			.000	MACH .600
△	8.000				
▽	12.000				

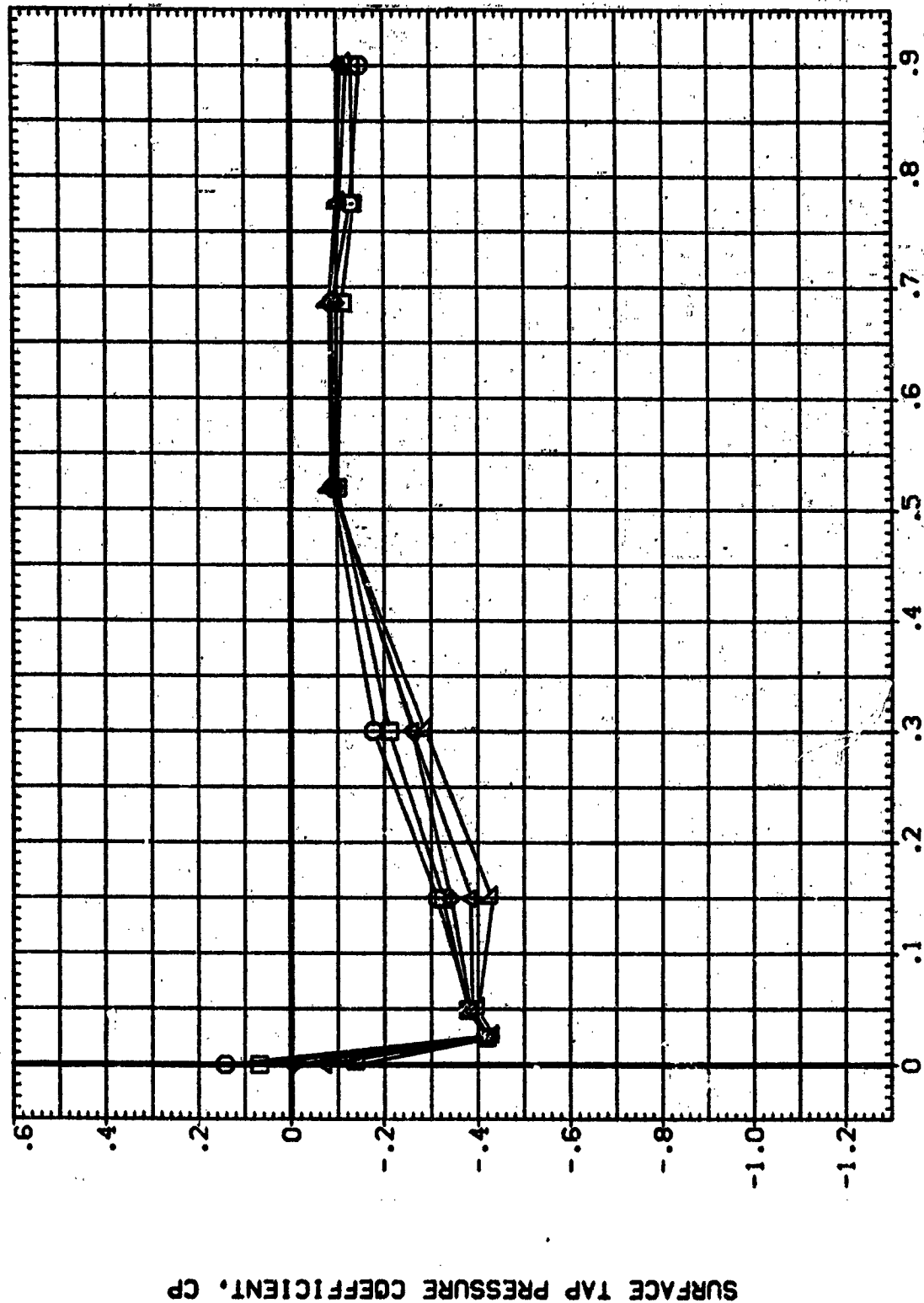


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.925	4.000	BOFLAP	.000 SPDRBK 35.000
□	.000			R-ELVN	.000 L-ELVN .000
◇	4.000				.000 MACH .600
△	8.000				
▽	12.000				

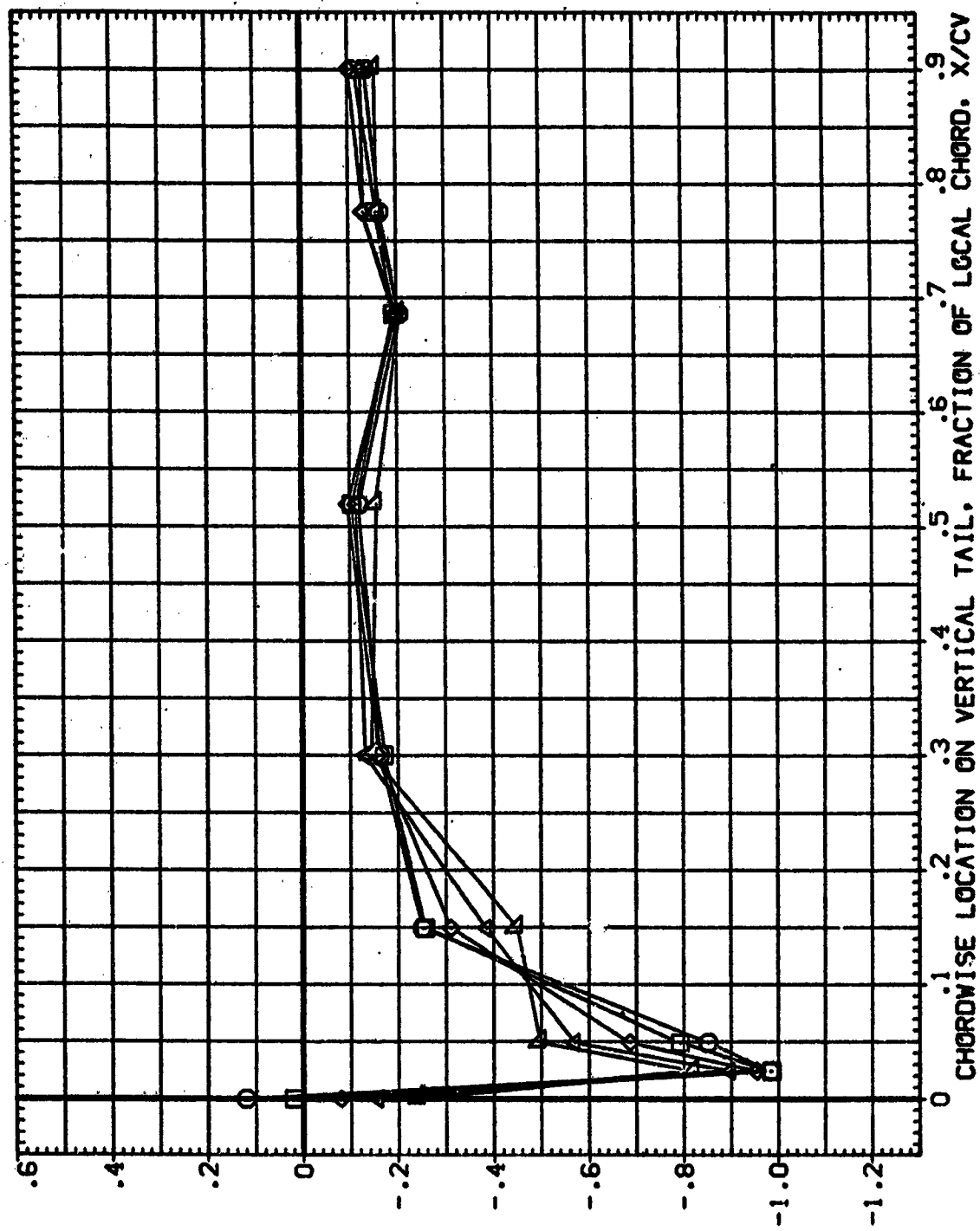


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(CA148) -140A/B/C/R ORB VERTICAL (IE8V17)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .316

BETA 8.000

PARAMETRIC VALUES

RUDDER	SPDBRK	L-ELVN	MACH
.000	.000	.000	.600
BOFLAP			
R-ELVN			

35.000
 .000
 .600

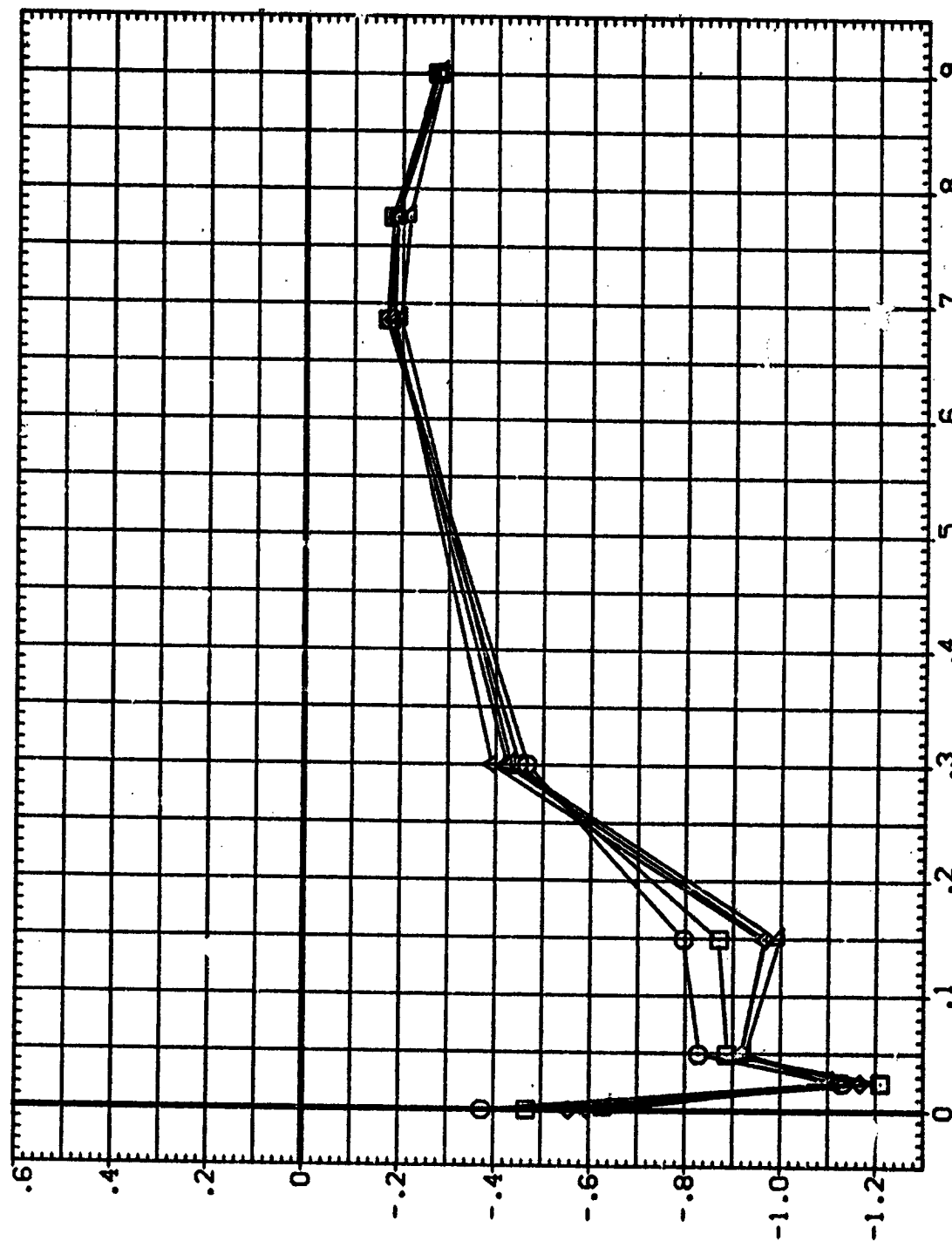


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
○	-4.000	.600	8.000	RUDDER .000 SPDBRK 35.000
□	.000			BDFLAP .000 L-ELVN .000
◇	4.000			R-ELVN .000 MACH .600
△	8.000			
▽	12.000			

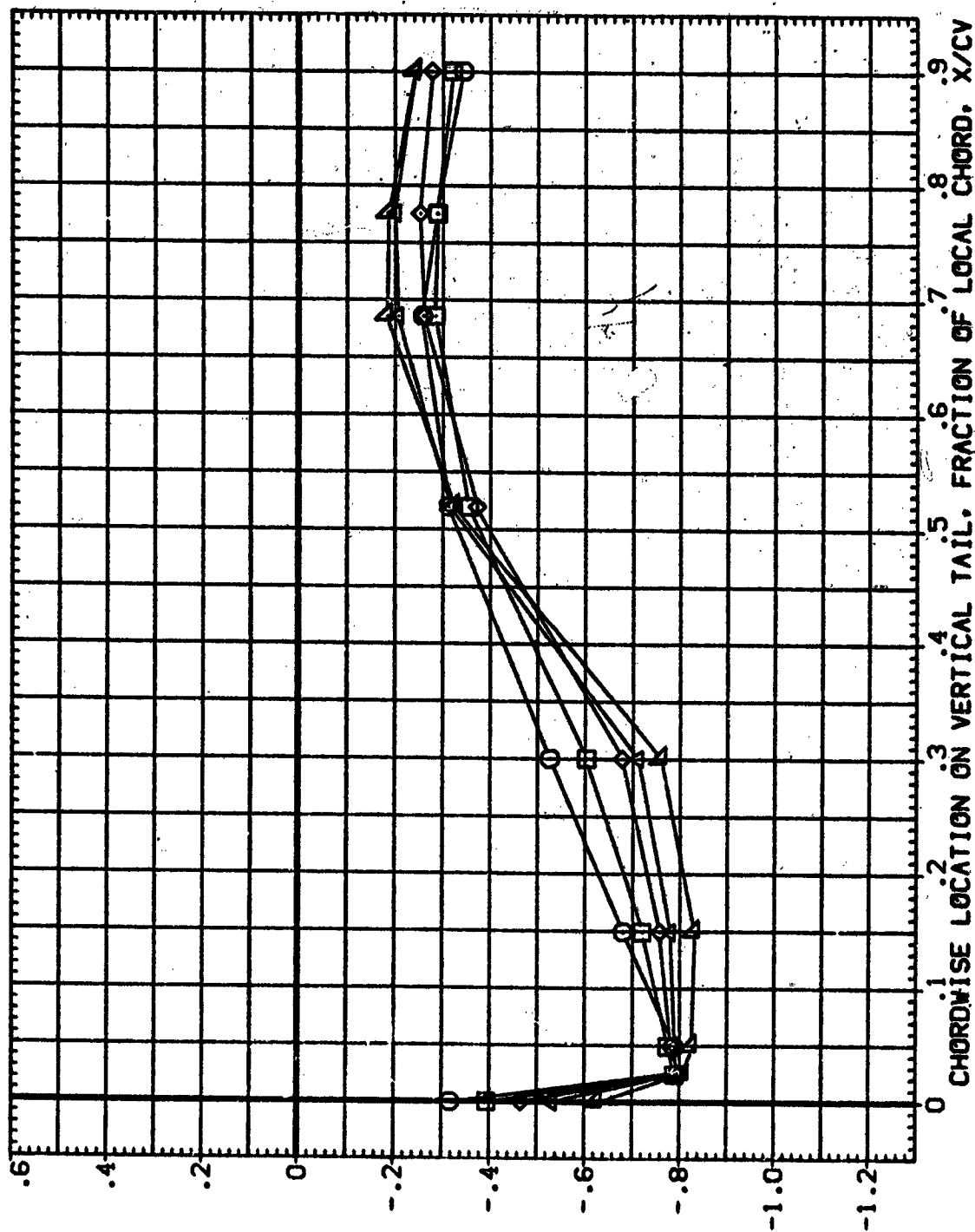


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V17)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.840	8.000	BOFLAP	.000 SPDRK 35.000
◇	.000			R-ELVN	.000 L-ELVN .000
△	4.000				.000 MACH .600
	8.000				
	12.000				

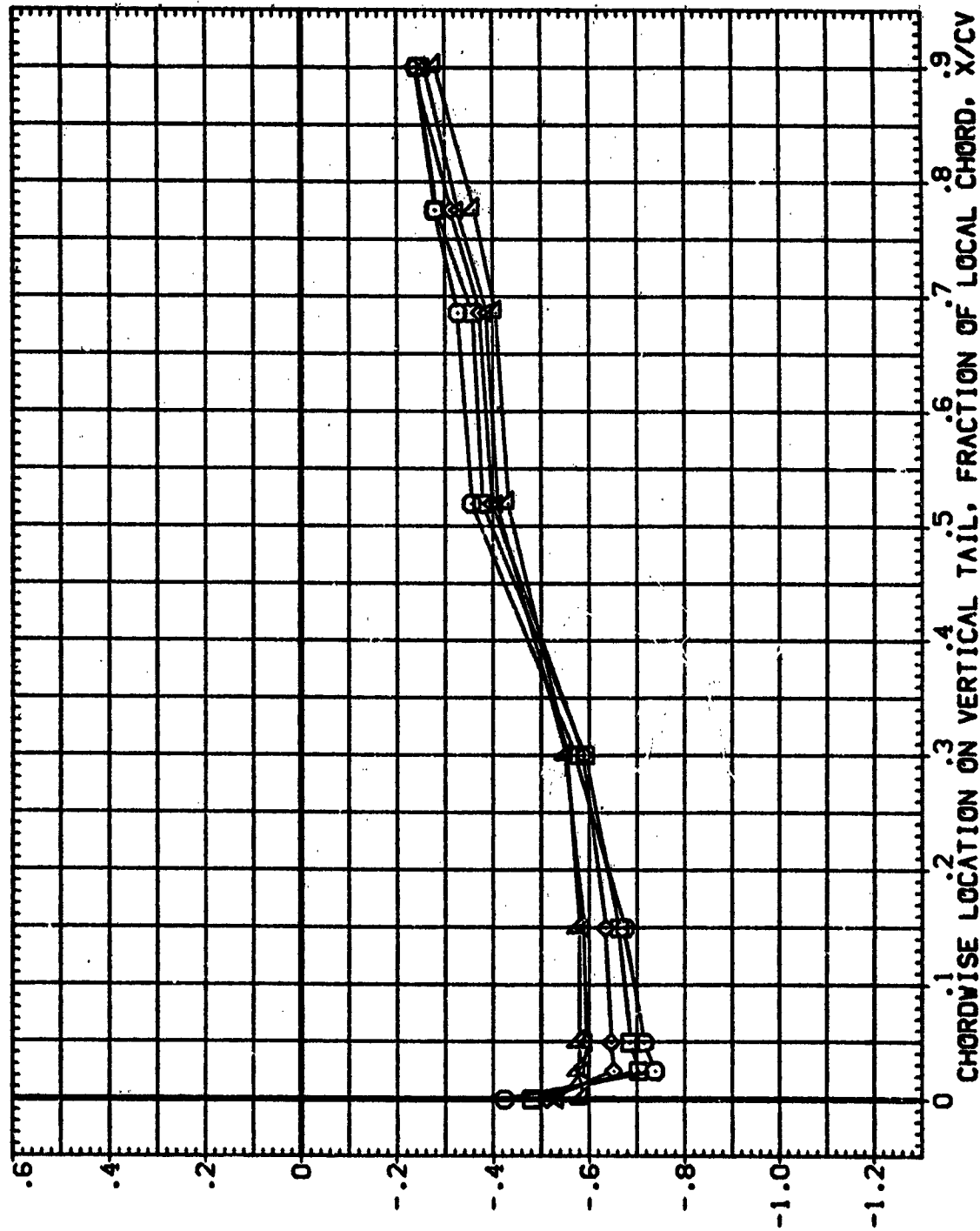


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .600

ALPHA Z/BV BETA
 -4.000 .925 8.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◊ □ ◻ ▽

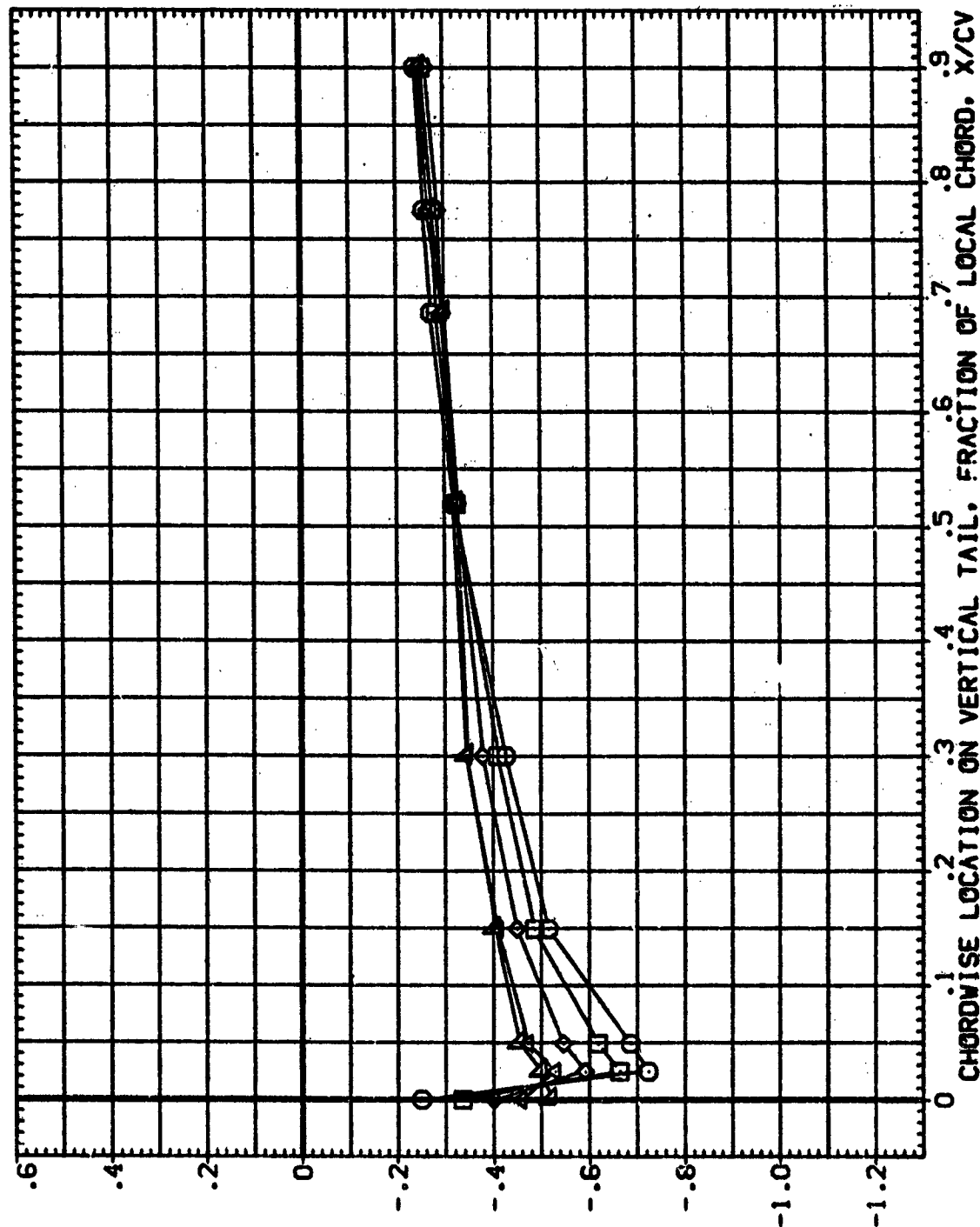


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V16)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES		
○	-4.000	.316	-4.000	RUDDER	.000	SPDRBK
□	.000			BOFLAP	.000	L-ELVN
◇	4.000			R-ELVN	.000	MACH
△	8.000					
▽	12.000					
						35.000
						.000
						.900

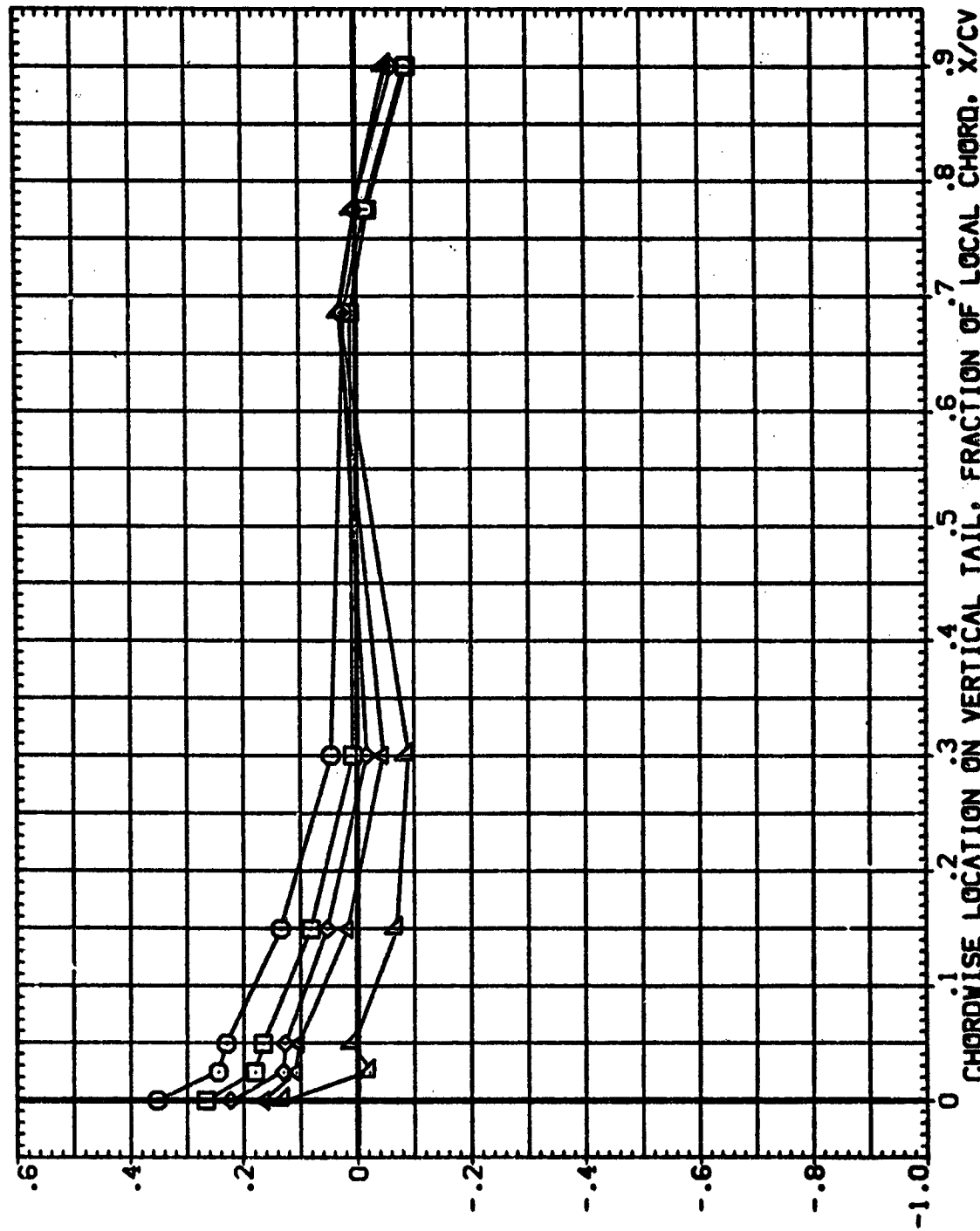


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V16)

SYMBOL
 ▲
 ◆
 □
 ○

ALPHA
 -4.000
 .000
 4.070
 8.000
 12.000

Z/BV
 .600

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .900

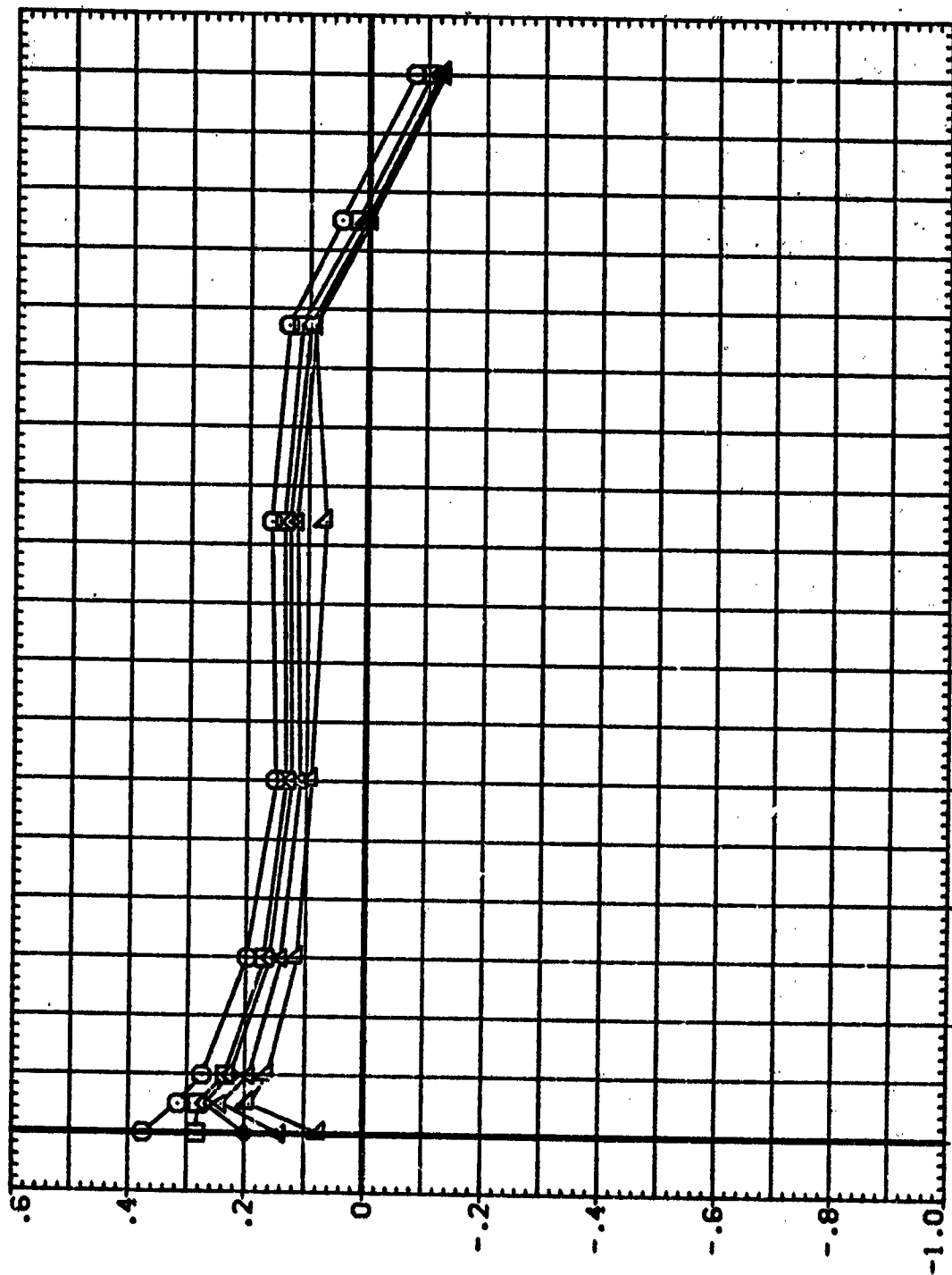


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V16)

PARAMETRIC VALUES
 RUDDER .000 SPDBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .900

SYMBOL ALPHA Z/BV BETA
 -4.000 .940 -4.000
 .000
 4.000
 8.000
 12.000

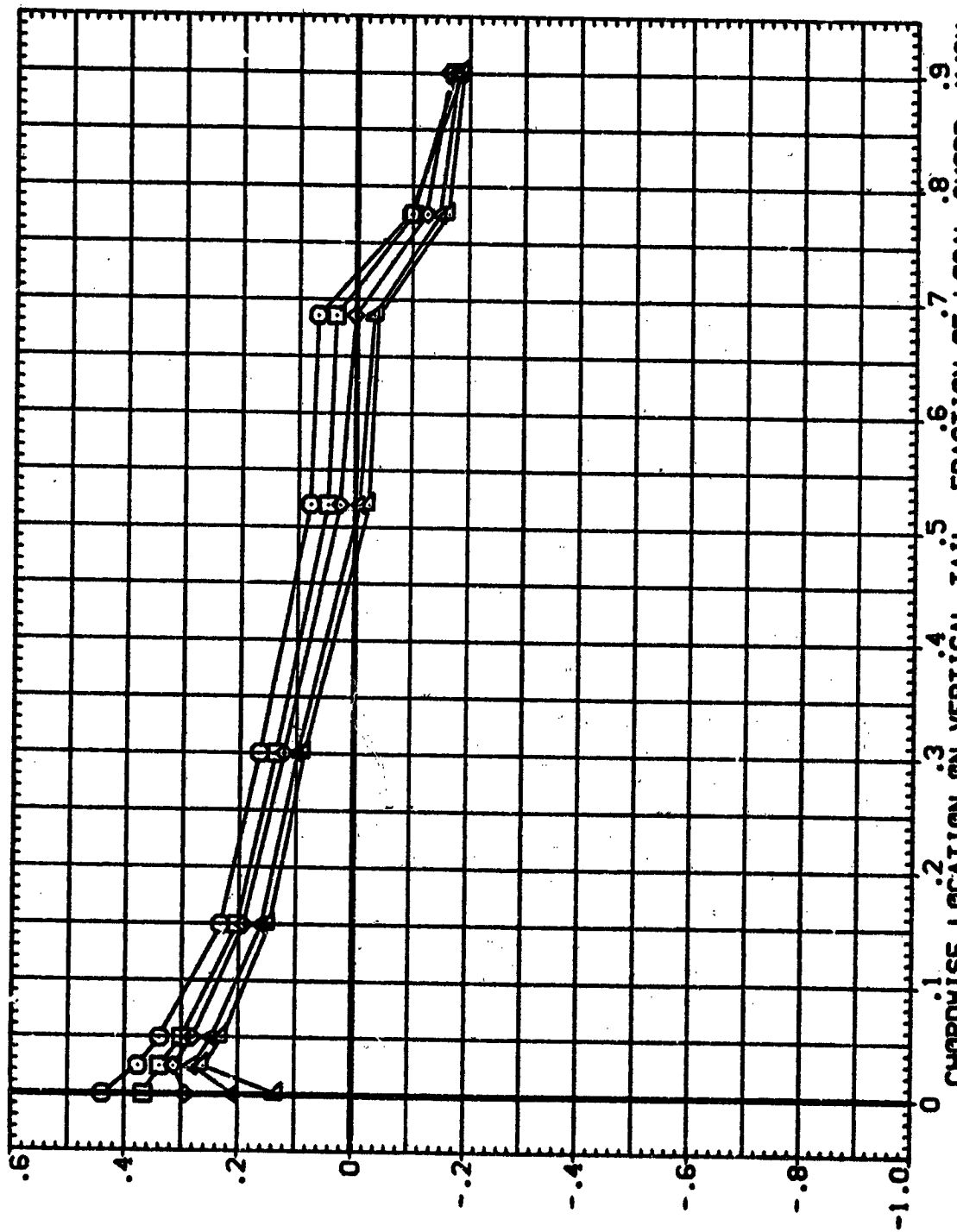


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 ▽
 ◇
 ◻
 ◻
 ◻

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .525

BETA
 -4.000

PARAMETRIC VALUES

RUDDER
 .000
 .000
 .000

BOFLAP
 .000
 .000
 .000

R-ELVN
 .000
 .000
 .000

SPDRBK
 .000
 .000
 .000

L-ELVN
 .000
 .000
 .000

MACH
 .000
 .000
 .900

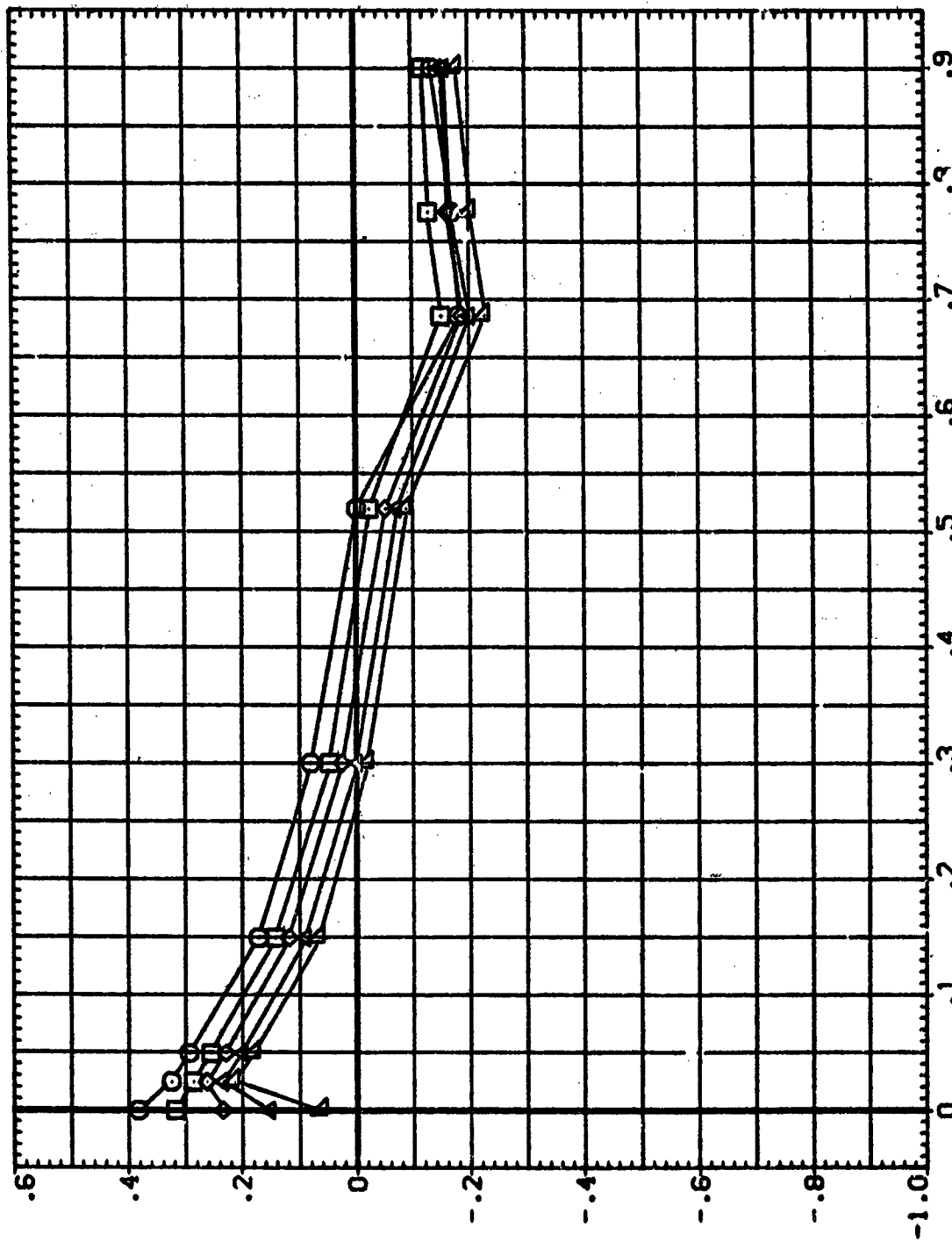


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V16)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .316

BETA
 .000

PARAMETRIC VALUES
 RUDDER
 .000
 SPOILER
 .000
 L-ELVN
 .000
 MACH
 .900

35.000
 .000
 .900

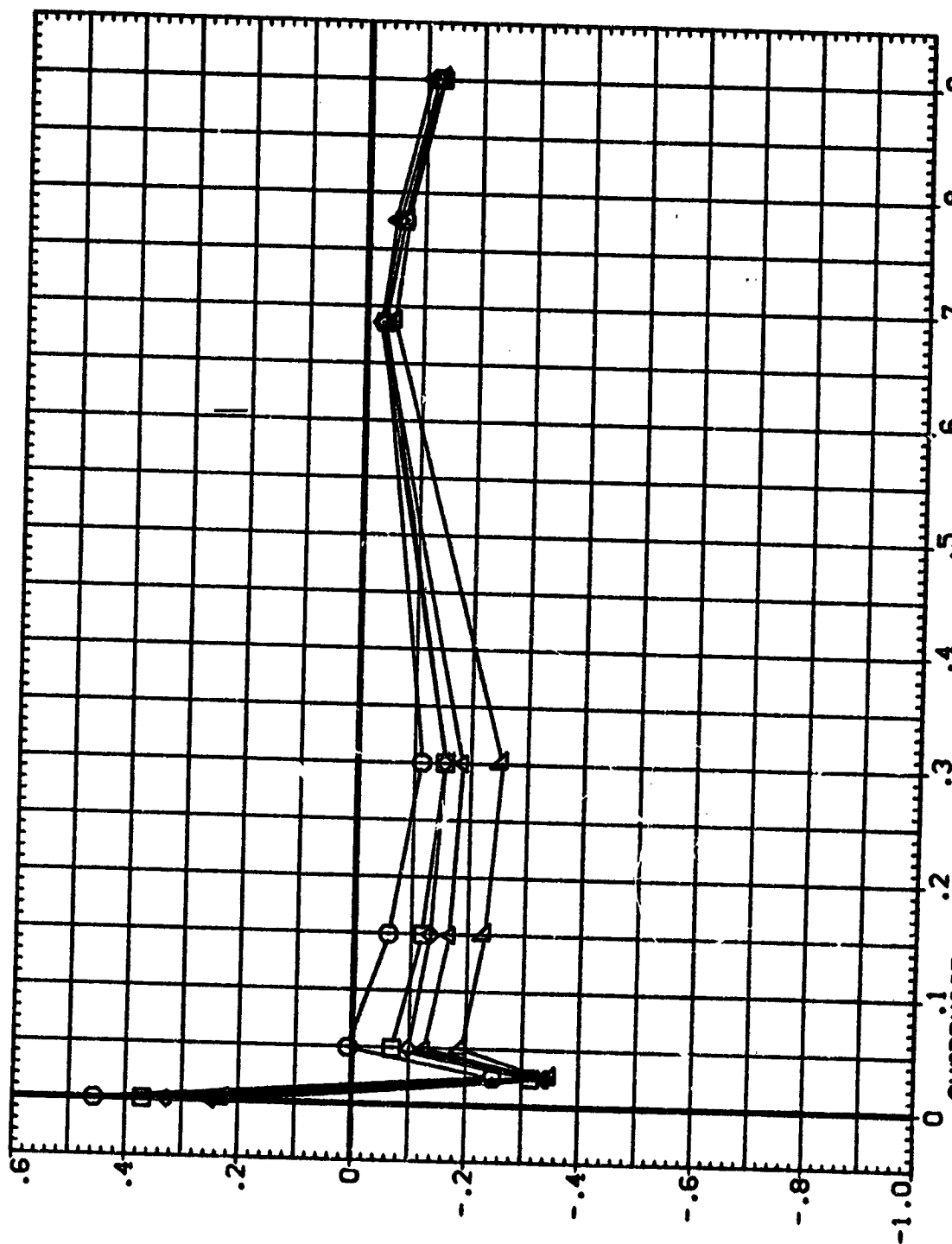


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A:48) -140A/B/C/R ORB VERTICAL (IE8V16)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
▷◇□○	-4.000	.840	.000	RUDDER
	.000			BDFLAP
	4.000			R-ELVN
	8.000			MACH
	12.000			
				35.000
				.000
				.000
				.500

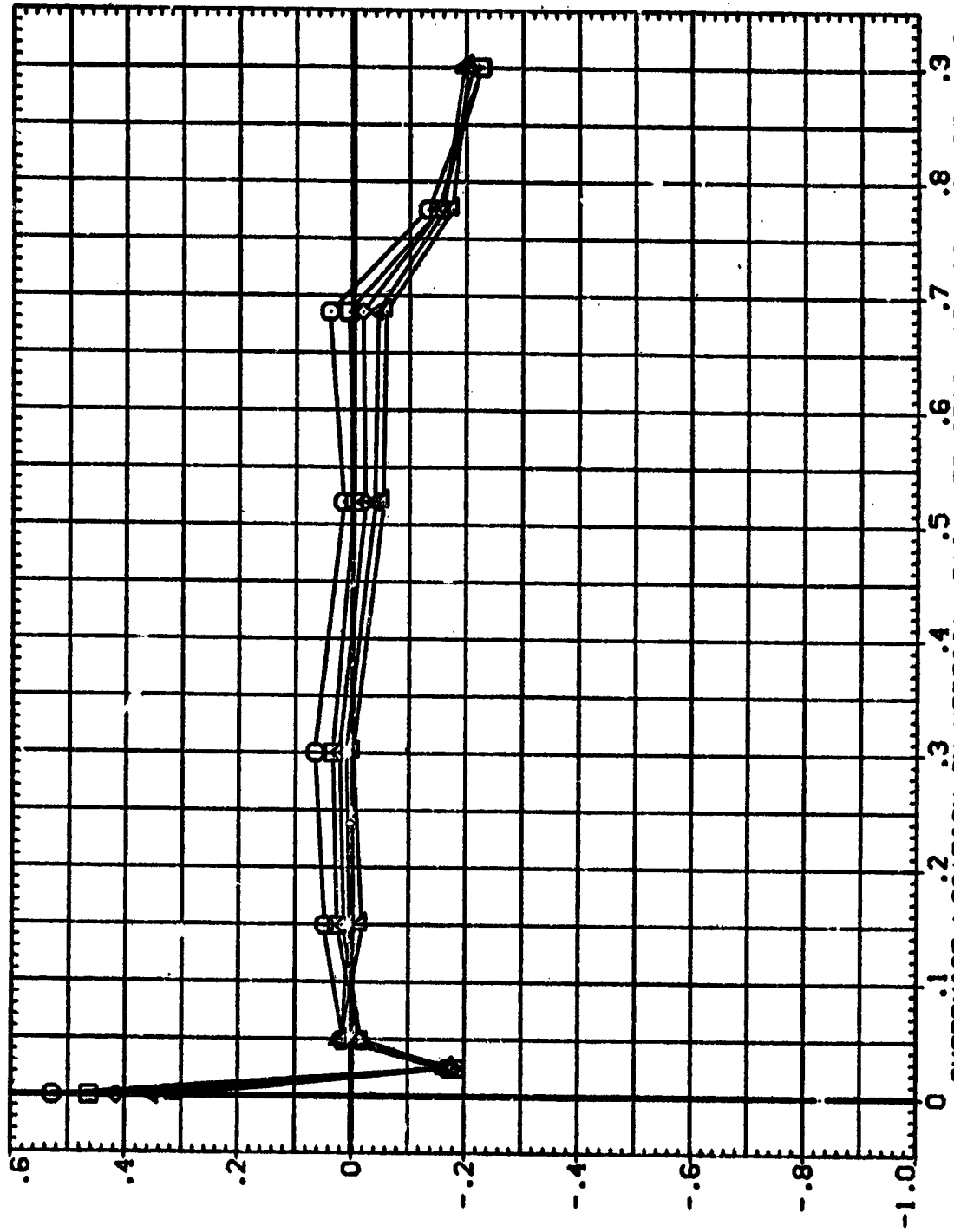


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 ▽
 ◇
 □
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 ▲

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925

BETA
 -4.000

PARAMETRIC VALUES
 RUCR
 BDF AP
 R-ELVN
 .000
 .000
 .000
 SPDBRK
 L-ELVN
 NALH
 35.000
 .000
 .600

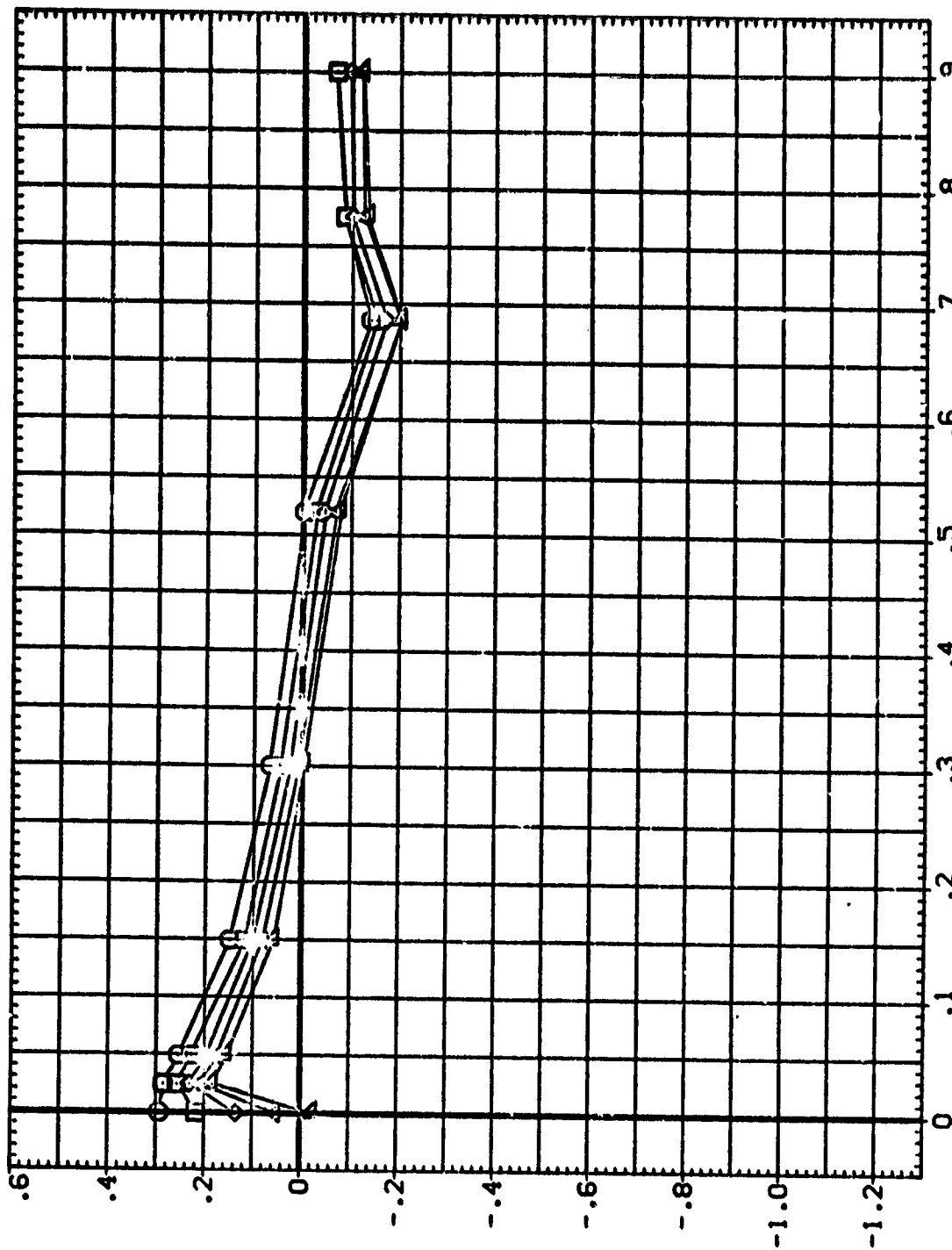


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL. FRACTION OF LOCAL CHORD. X/CV

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V17)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
○	-4.000	.316	.000	RUDDER .000 SPEEDBK 35.000
□	.000			BDFLAP .000 L-EL 1 .000
◇	4.000			R-ELVN .000 MACH .600
△	8.000			
▽	12.000			

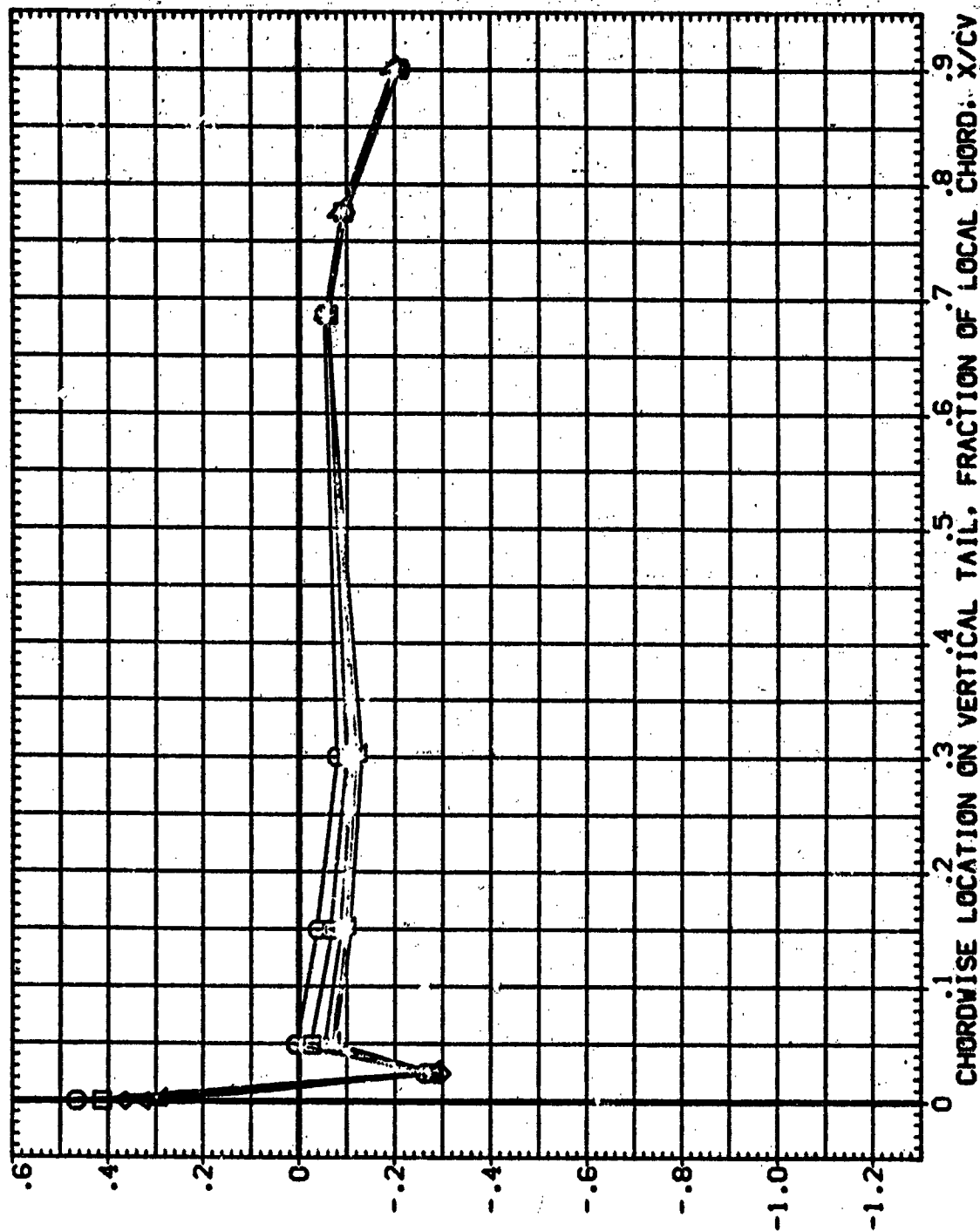


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V16)

SYMBOL
 ▽
 ◇
 □
 ▴

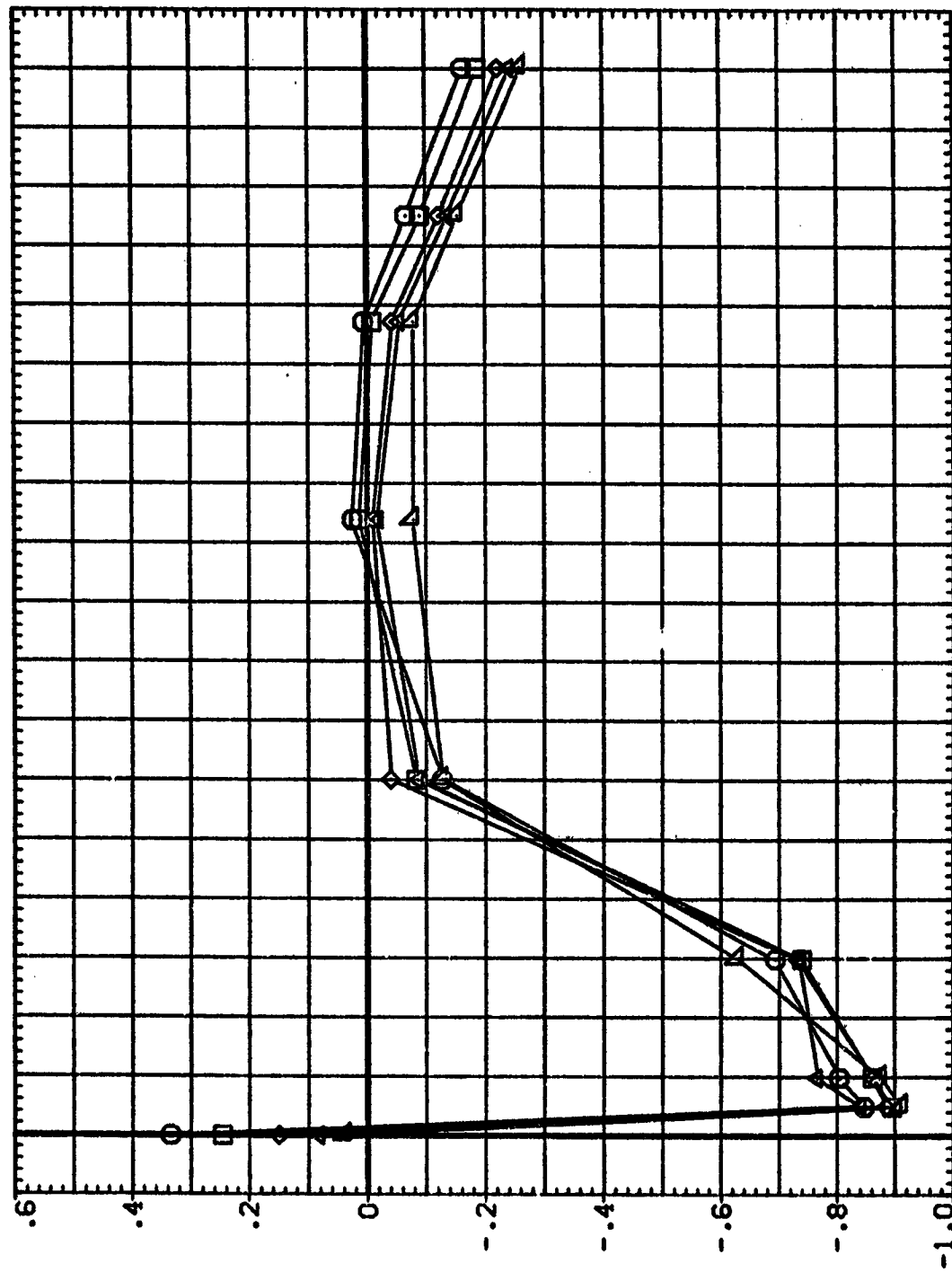
ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .500

BETA
 4.000

PARAMETRIC VALUES

RUDDER	SPOBRK	35.000
BOFLAP	.000	.000
R-ELVN	.000	.500



CHORDWISE LOCATION ON VERTICAL TAIL. FRACTION OF LOCAL CHORD, X/CV

FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

(1E8V16)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV BETA
 .840 4.000

PARAMETRIC VALUES
 RUDDER .000 SPDBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH .900

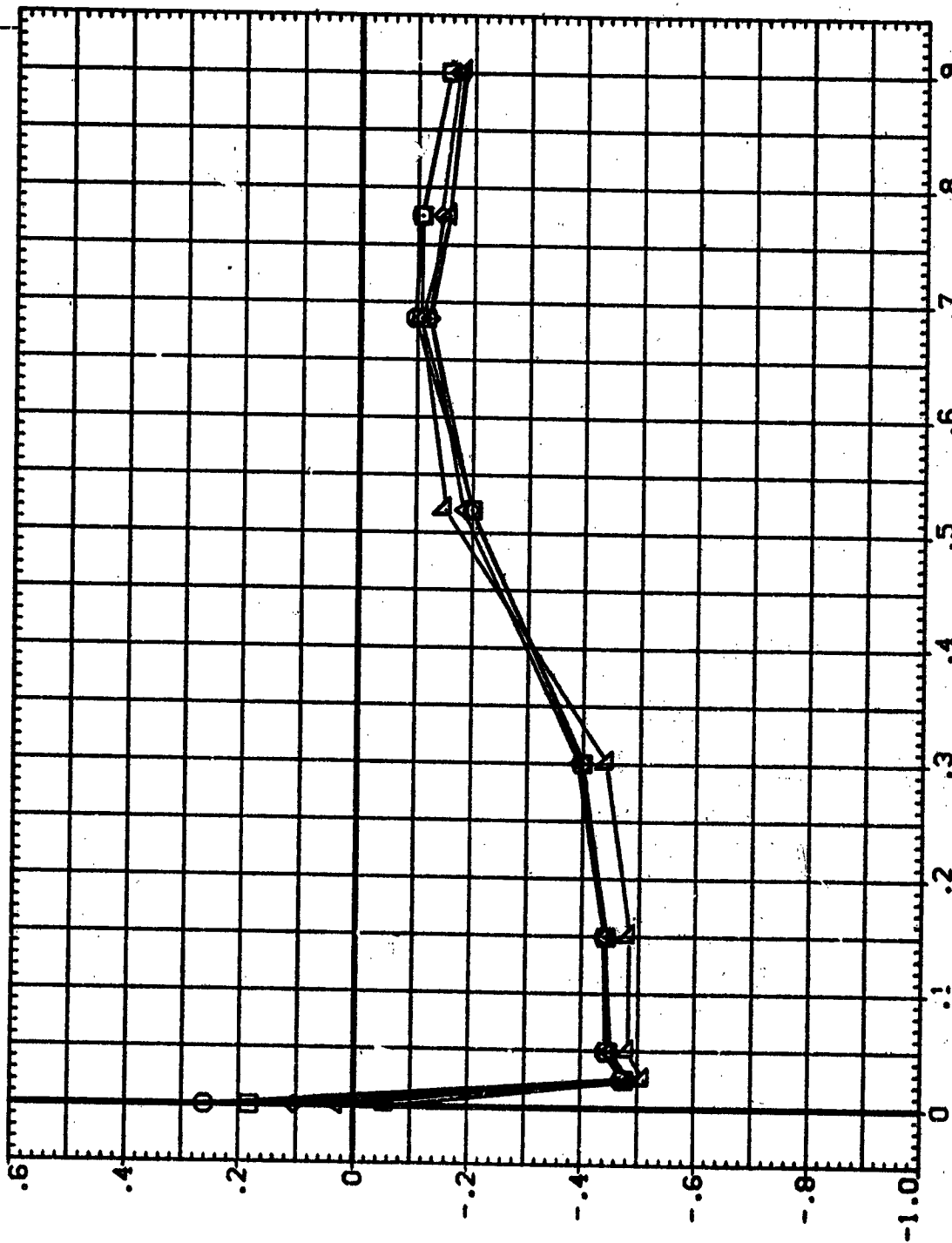


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 ○
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BOFLAP
 R-ELVN

SPOBRK
 .000
 .000
 .000

L-ELVN
 .000
 .000
 .000

MACH
 .900
 .900
 .900

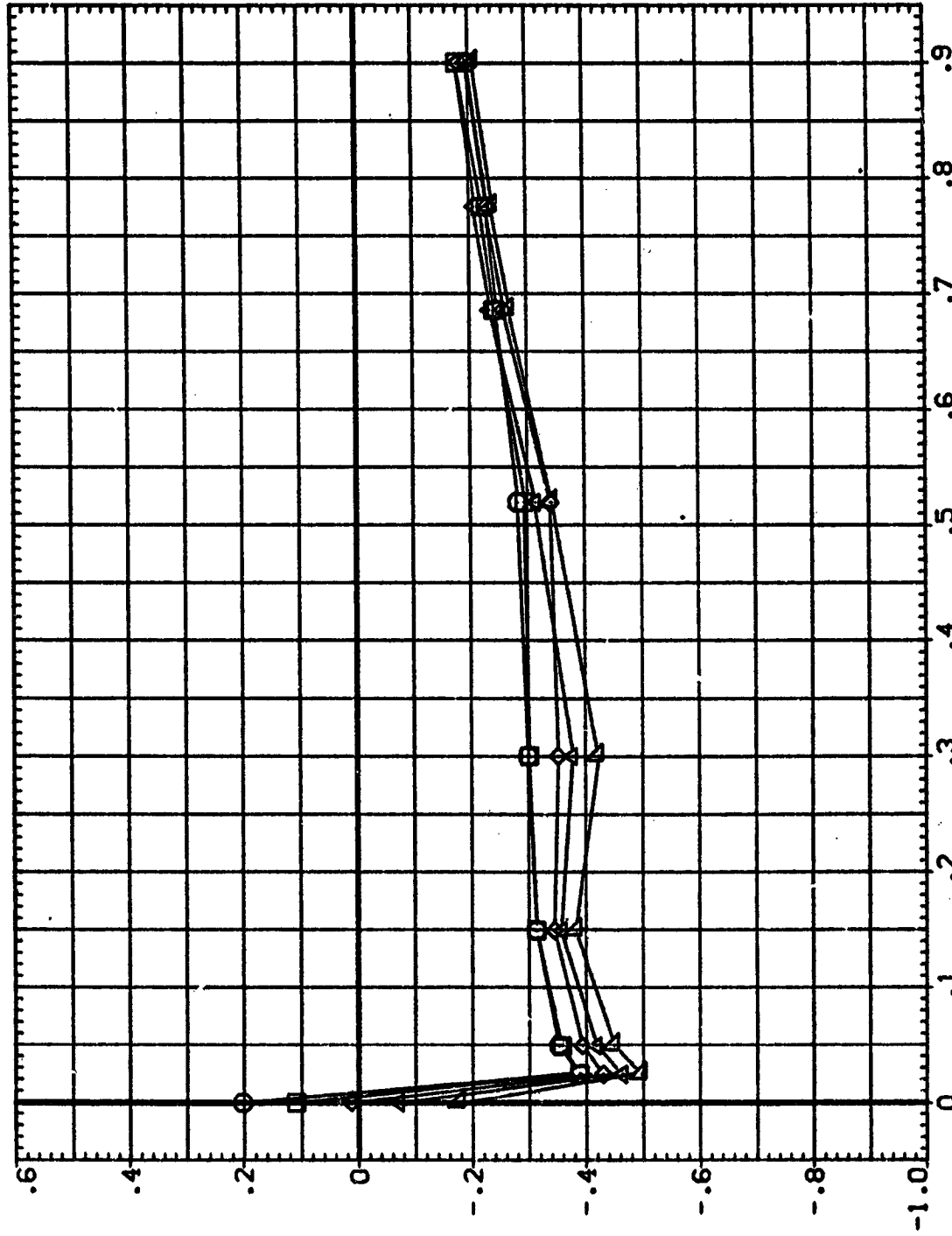


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V15)

SYMBOL
 ▽
 ◊
 □
 ○

ALPHA -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .316

BETA -4.000

PARAMETRIC VALUES

RUDDER	SPDRBK	35.000
BDFLAP	.000	.000
R-ELVN	.000	.000
	MACH	1.100

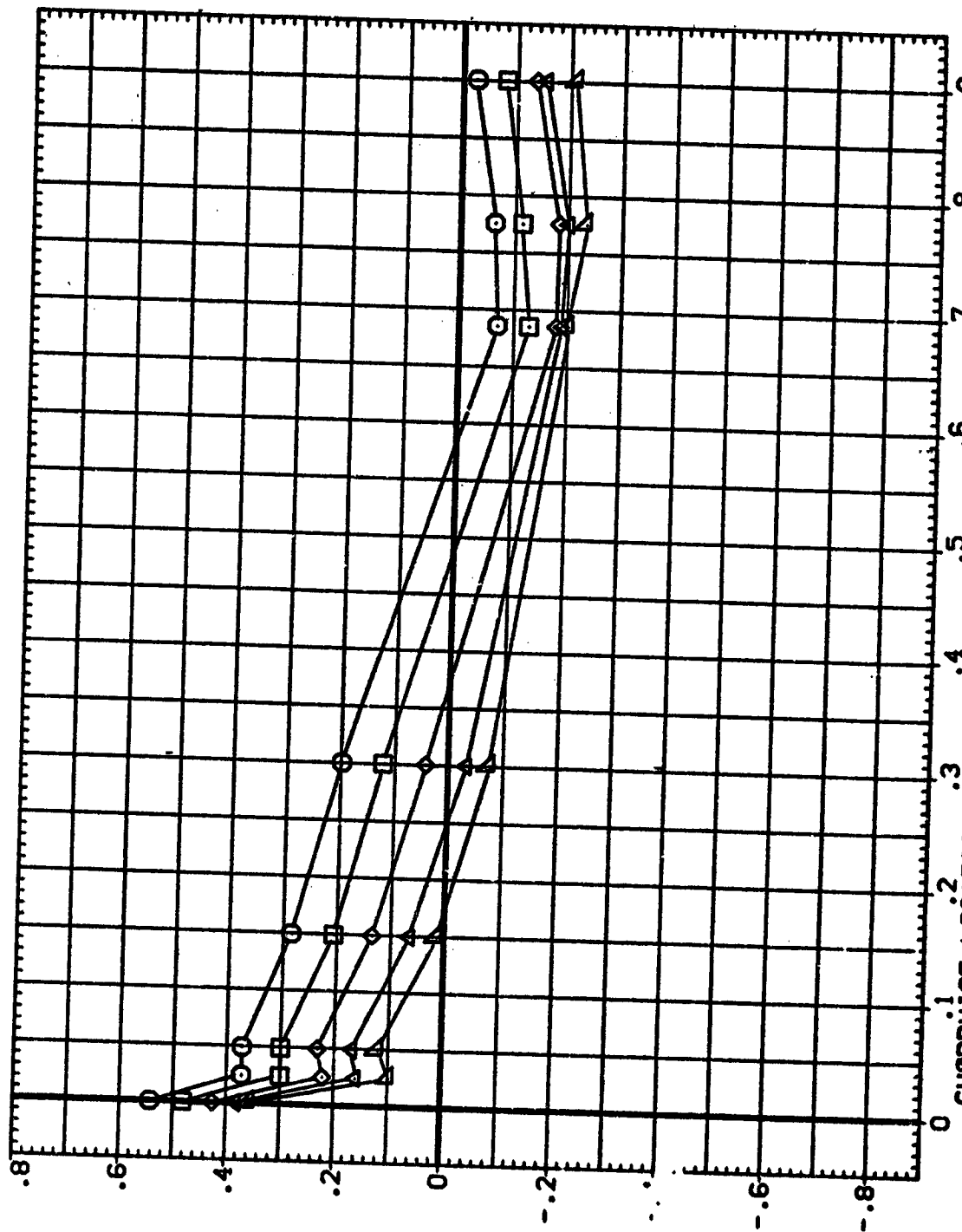


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V15)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600

BETA
 -4.000

PARAMETRIC VALUES

RUDDER	SPDRBK	35.000
80FLAP	.000	.000
R-ELVN	.000	1.100

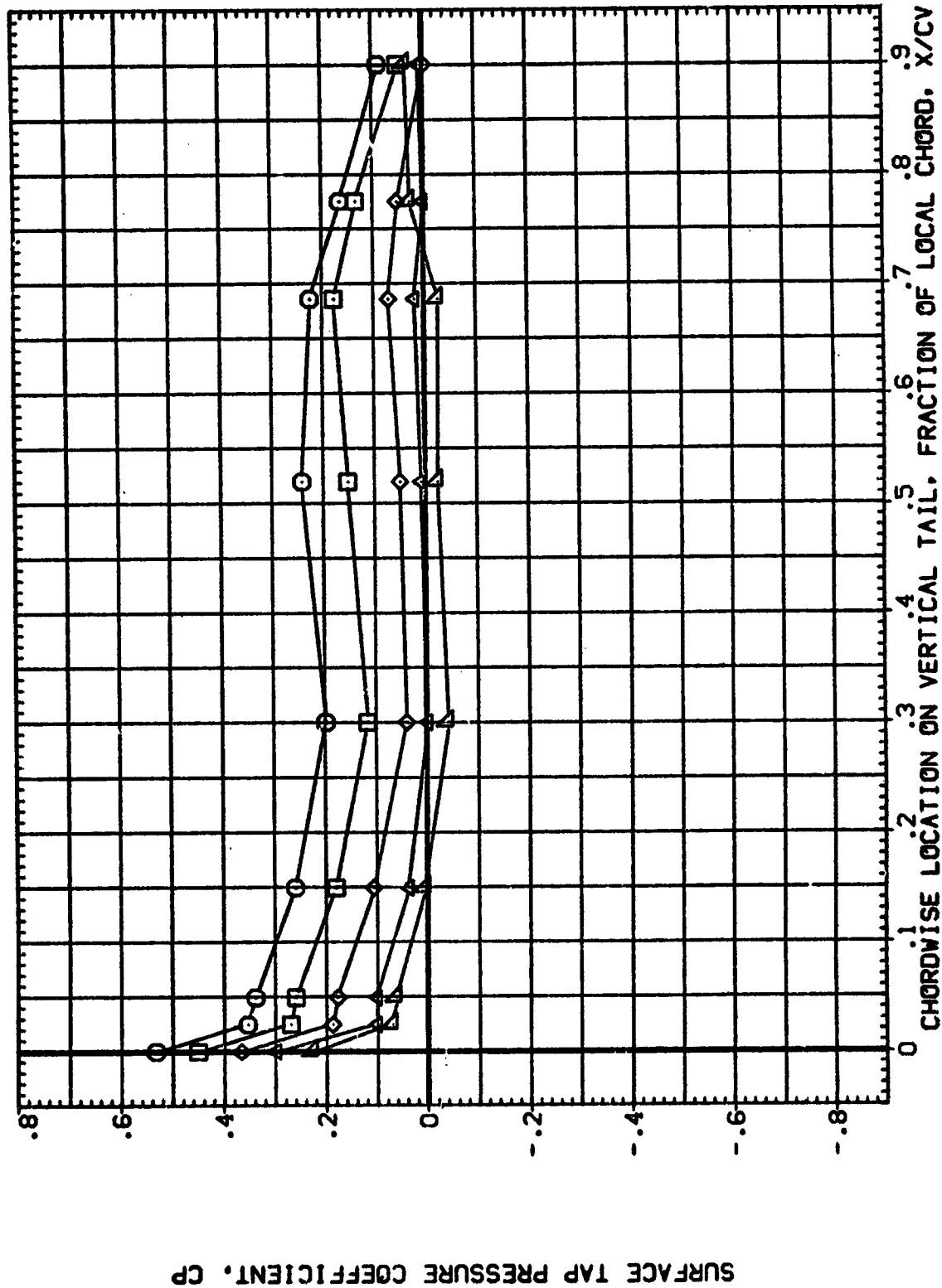


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V15)

PARAMETRIC VALUES
 RUDDER .000 SPDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

ALPHA Z/BV BETA
 -4.000 .940 -4.000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◆ □ ○

SURFACE TAP PRESSURE COEFFICIENT, CP

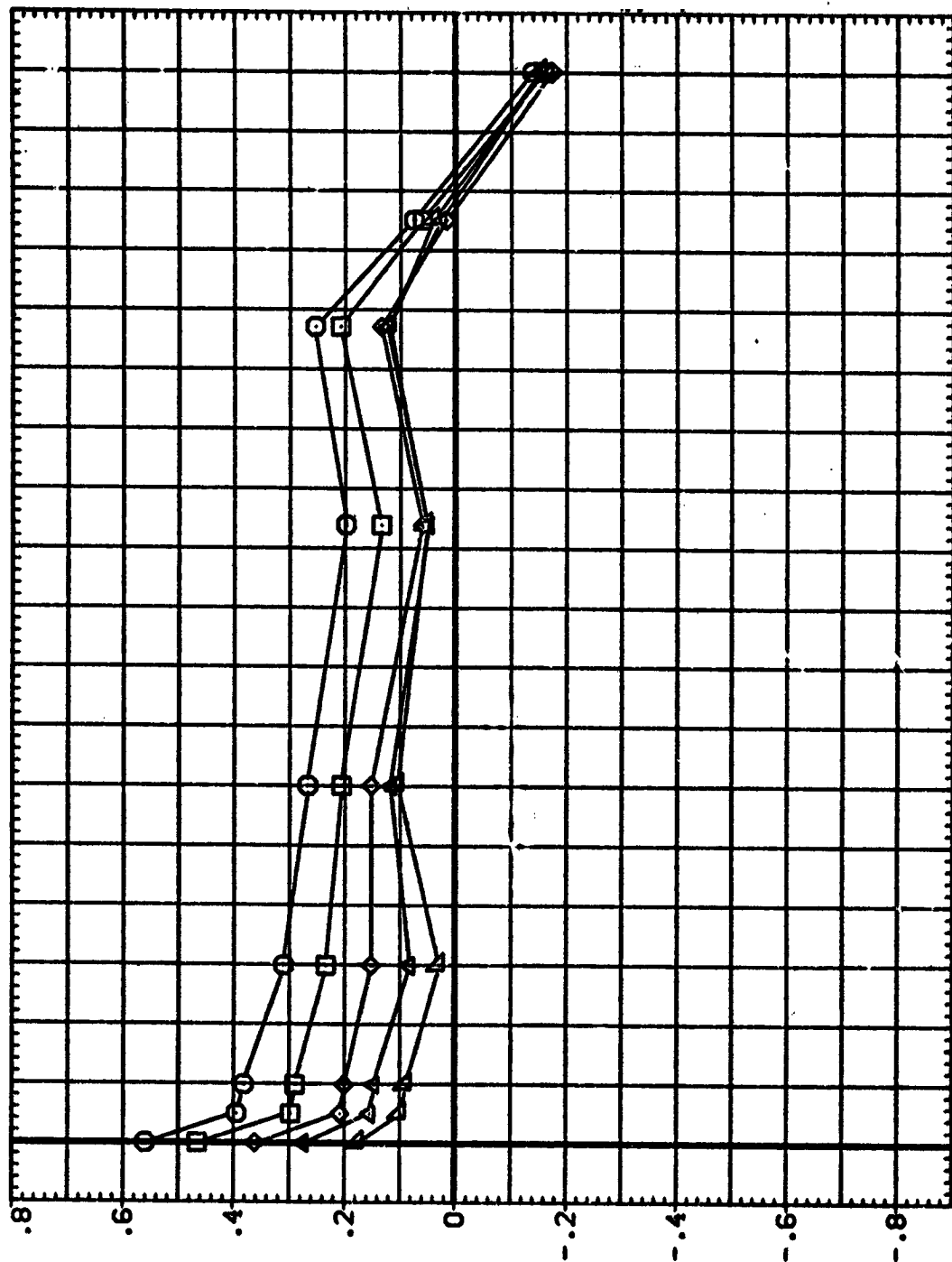


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 0 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

SYMBOL ALPHA Z/BV BETA
 □ -4.000 .925 -4.000
 ◇ .000
 △ 4.000
 ▽ 8.000
 ▴ 12.000

PARAMETRIC VALUES
 RUDDER .000 SPEEDRK 35.000
 SDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

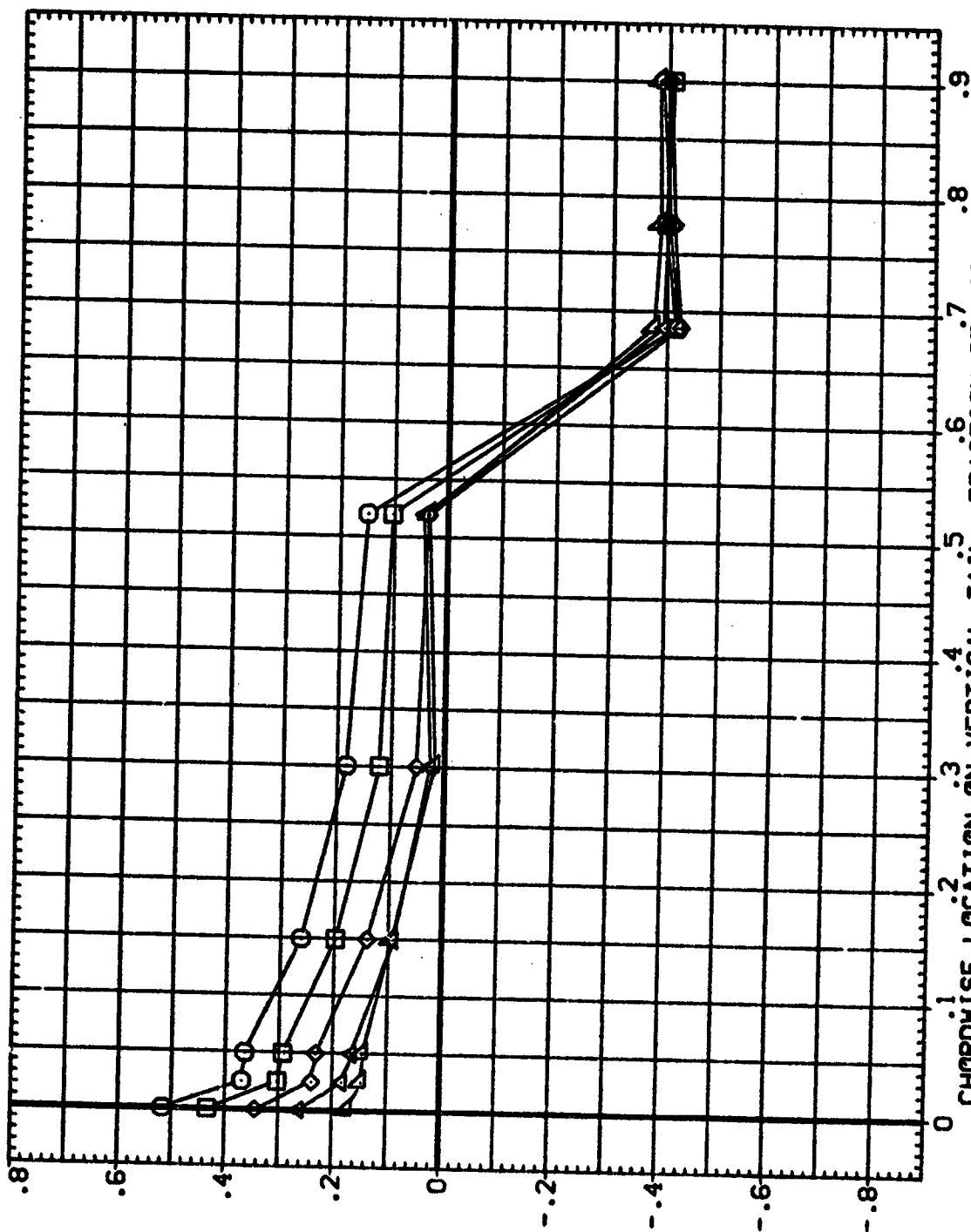


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V15)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	SPOBRK	L-ELVN	MACH
○	-4.000	.316	.000		.000	.000	35.000
□	.000			BDFLAP	.000	.000	.000
◇	4.000			R-ELVN	.000	.000	1.100
△	8.000						
▽	12.000						

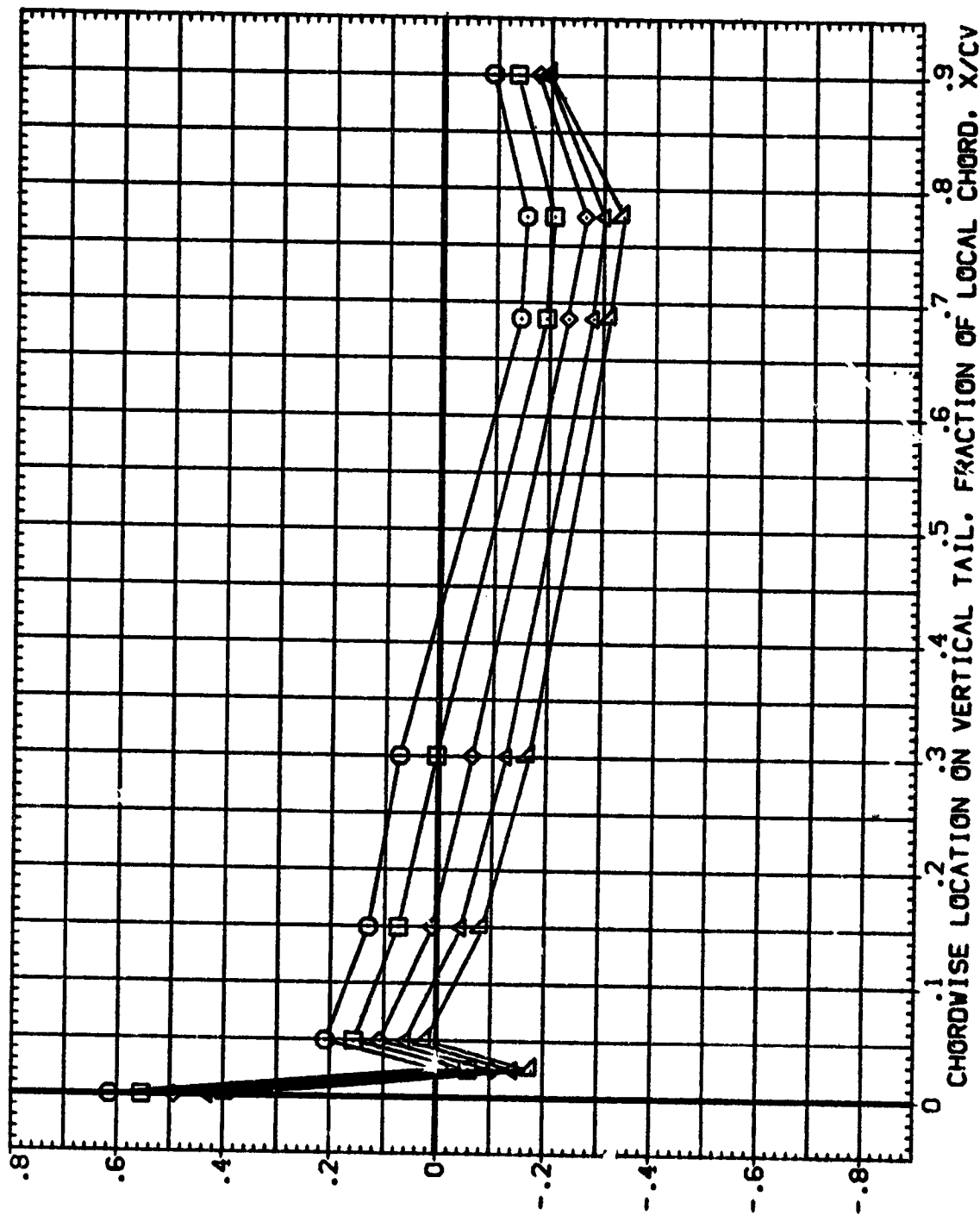


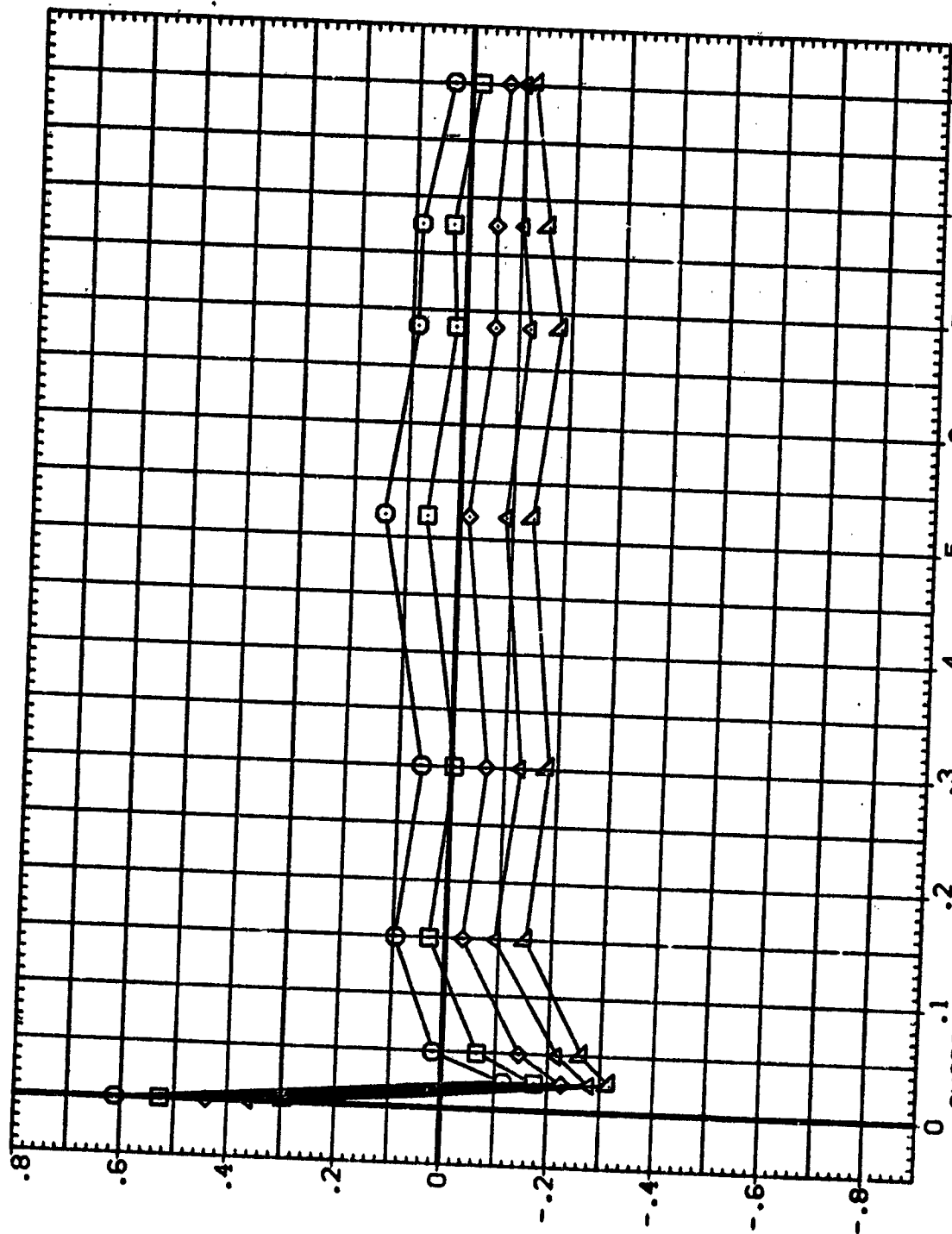
FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 □
 ◇
 △
 ▲

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .600
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V15)

SYMBOL
 ▽
 ◇
 □
 ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV .840
 BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDBRK 35.000
 SDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

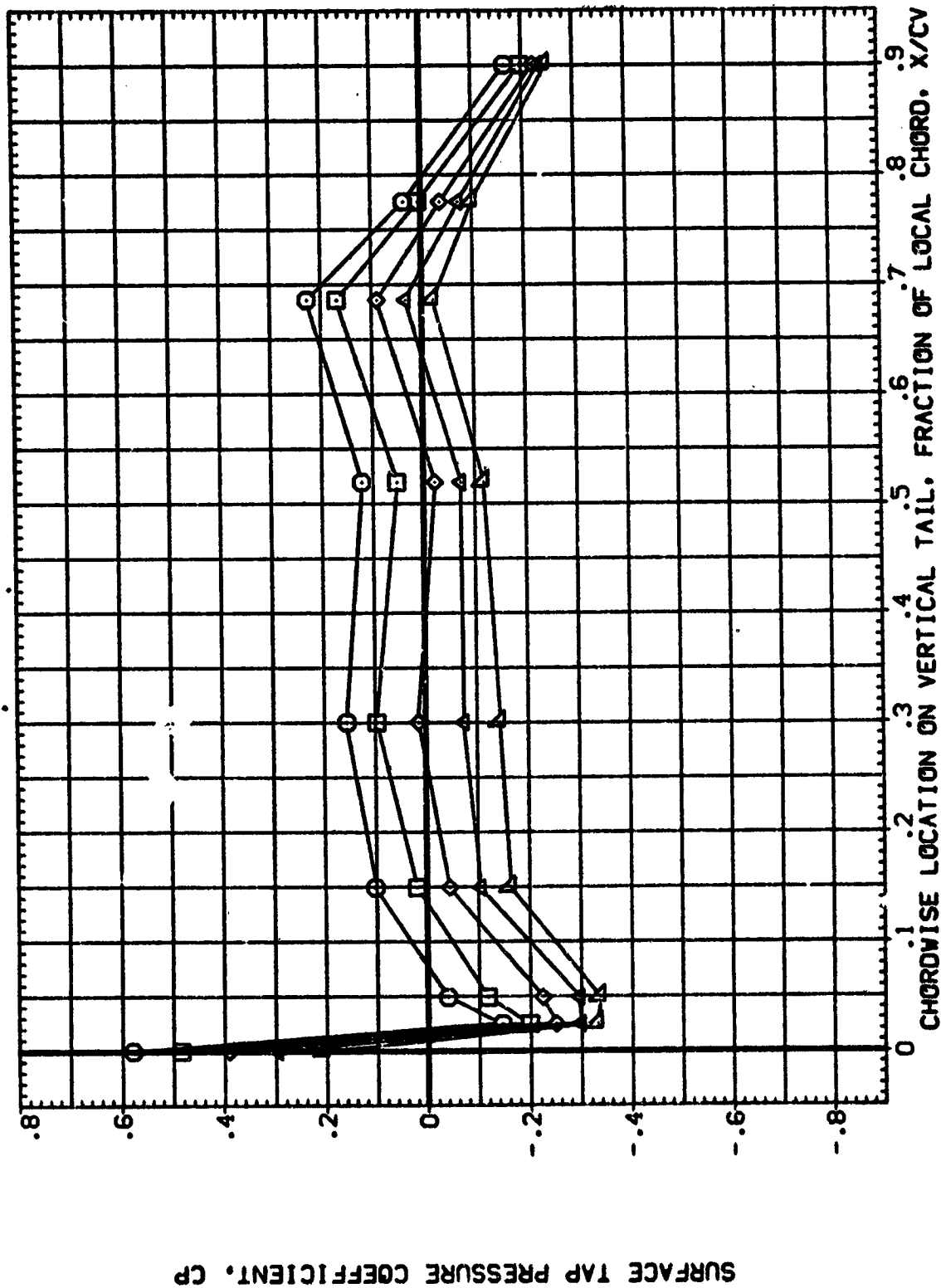


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

(IE8V15)

SYMBOL
 ∇ \diamond \square \circ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/B ∇ .925

BETA .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

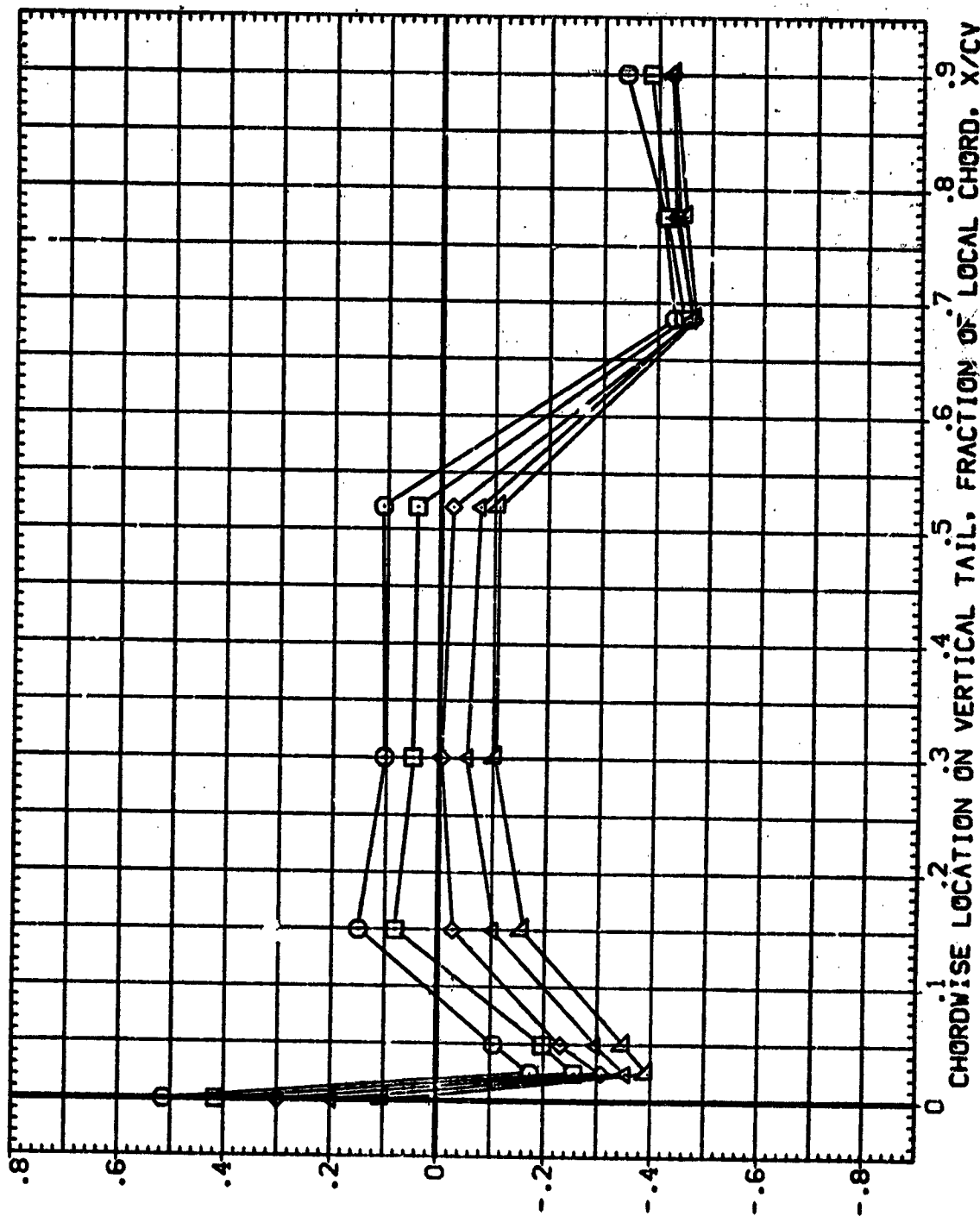


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V15)

PARAMETRIC VALUES	RUDDER	35.000
	80FLAP	.000
	R-ELVN	.000
	MACH	1.100

ALPHA	Z/BV	BETA
-4.000	.316	4.000
.000		
4.000		
8.000		
12.000		

SYMBOL
 ▽
 ◇
 □
 ○

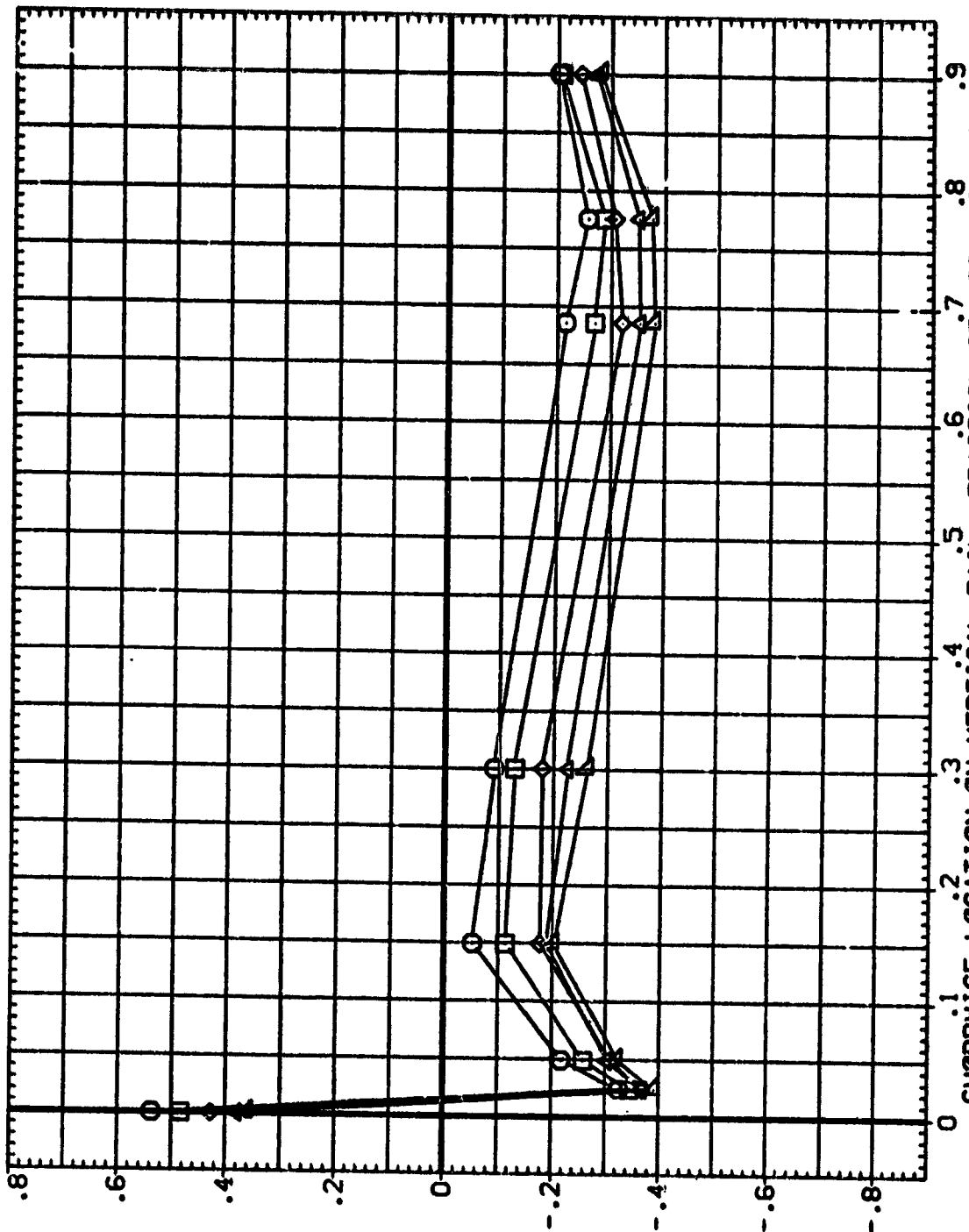


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V15)

SYMBOL
 ○ □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV BETA
 .600 4.000

RUDDER
 80FLAP
 R-ELVN

PARAMETRIC VALUES

.000 .000 .000
 SPDRFR L-ELVN MACH
 35.000 .000 1.100

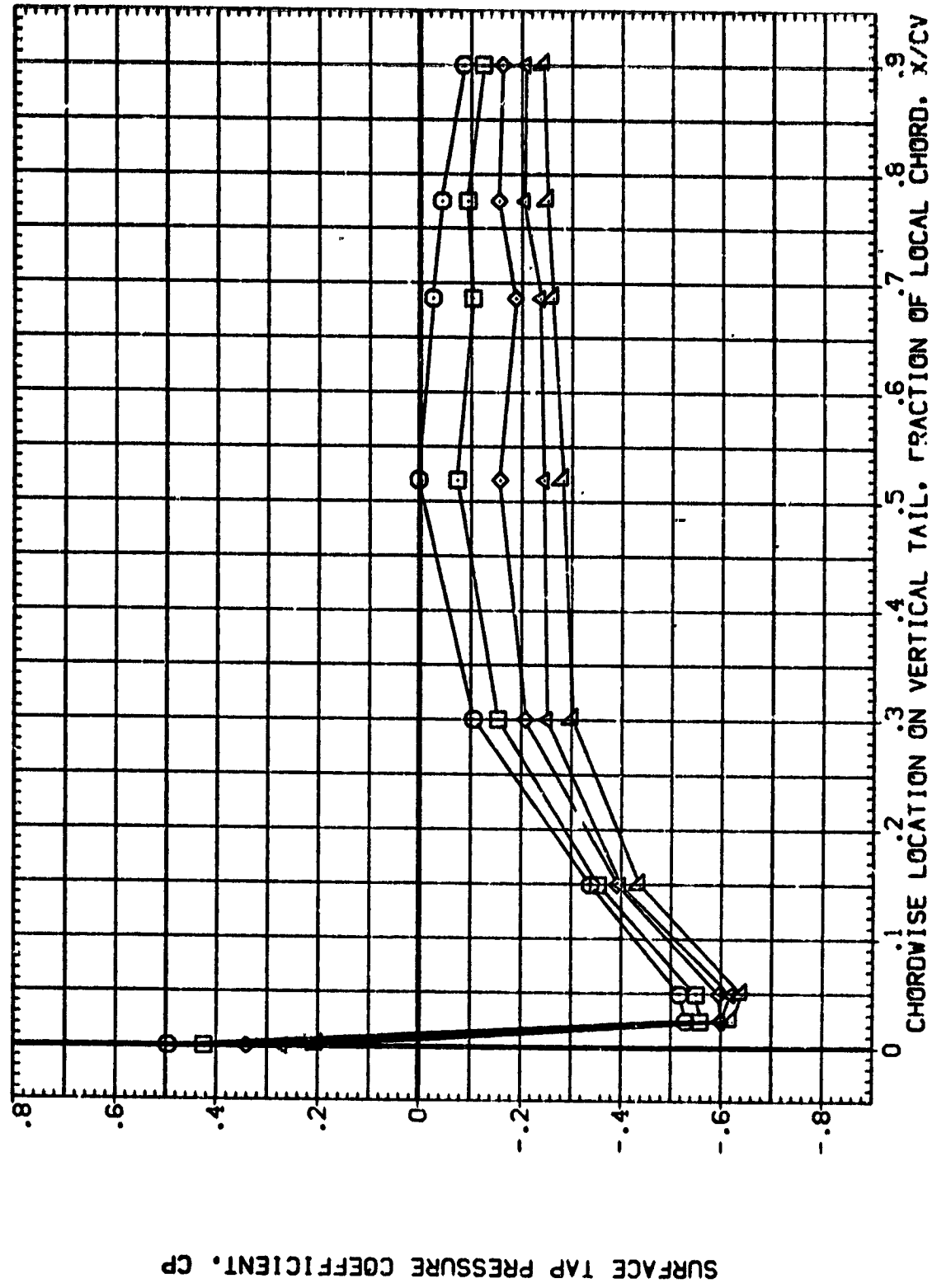


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V15)

PARAMETRIC VALUES
 RUDDER .000 SPDBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.100

ALPHA Z/BV BETA
 -4.000 .840 4.000
 .000
 4.000
 8.000
 12.000

SYMBOL
 ▽ ◊ □ ○

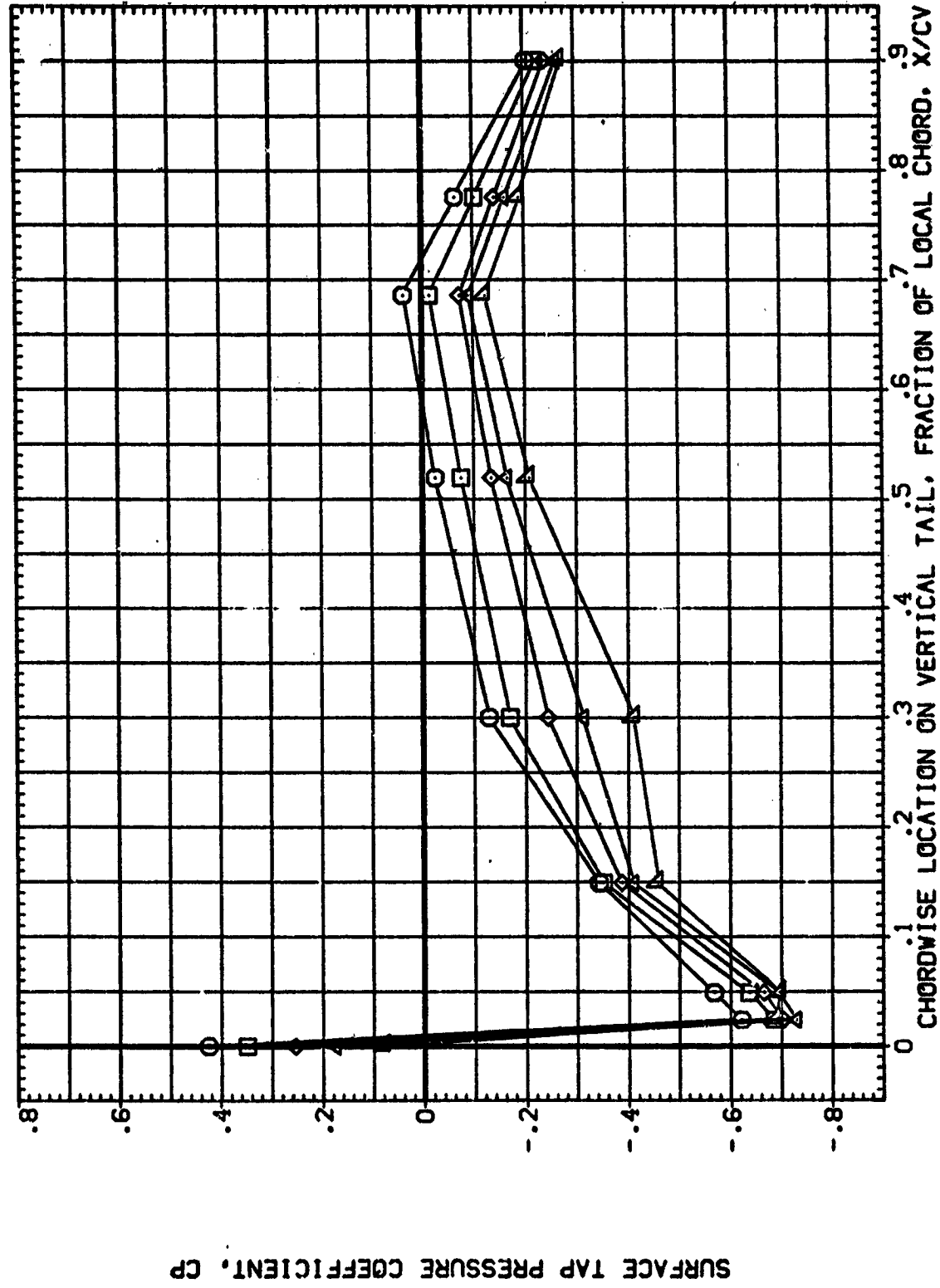


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 ▽
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925

BETA
 4.000

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000

SPOBRK 35.000
 L-ELVN .000
 MACH 1.100

SURFACE TAP PRESSURE COEFFICIENT, CP

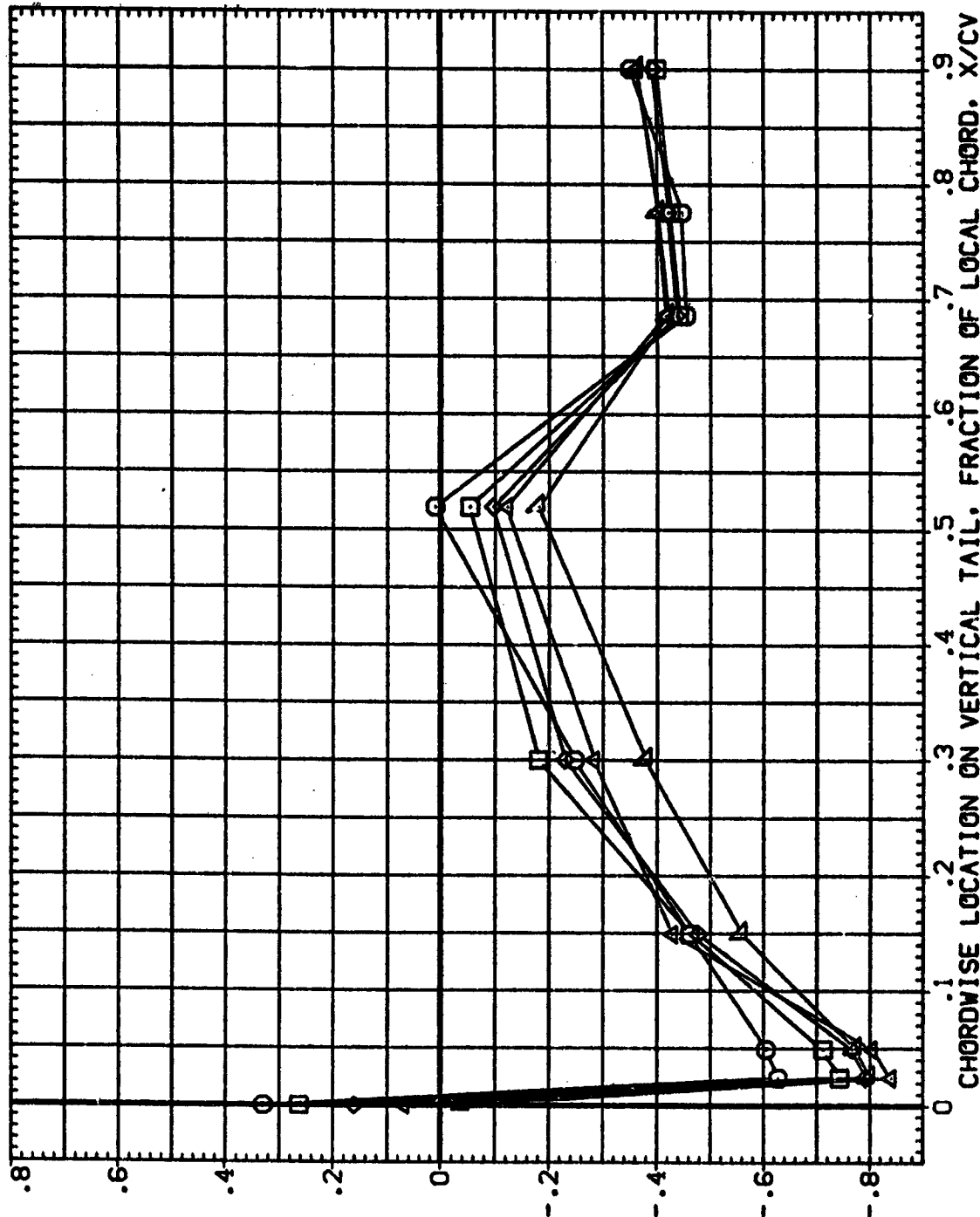


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V14)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES	
○	-4.000	.316	-4.000	BDFLAP	.000	SPOBRK
□	.000			R-ELVN	.000	L-ELVN
◇	4.000				.000	MACH
△	8.000					
▽	12.000					

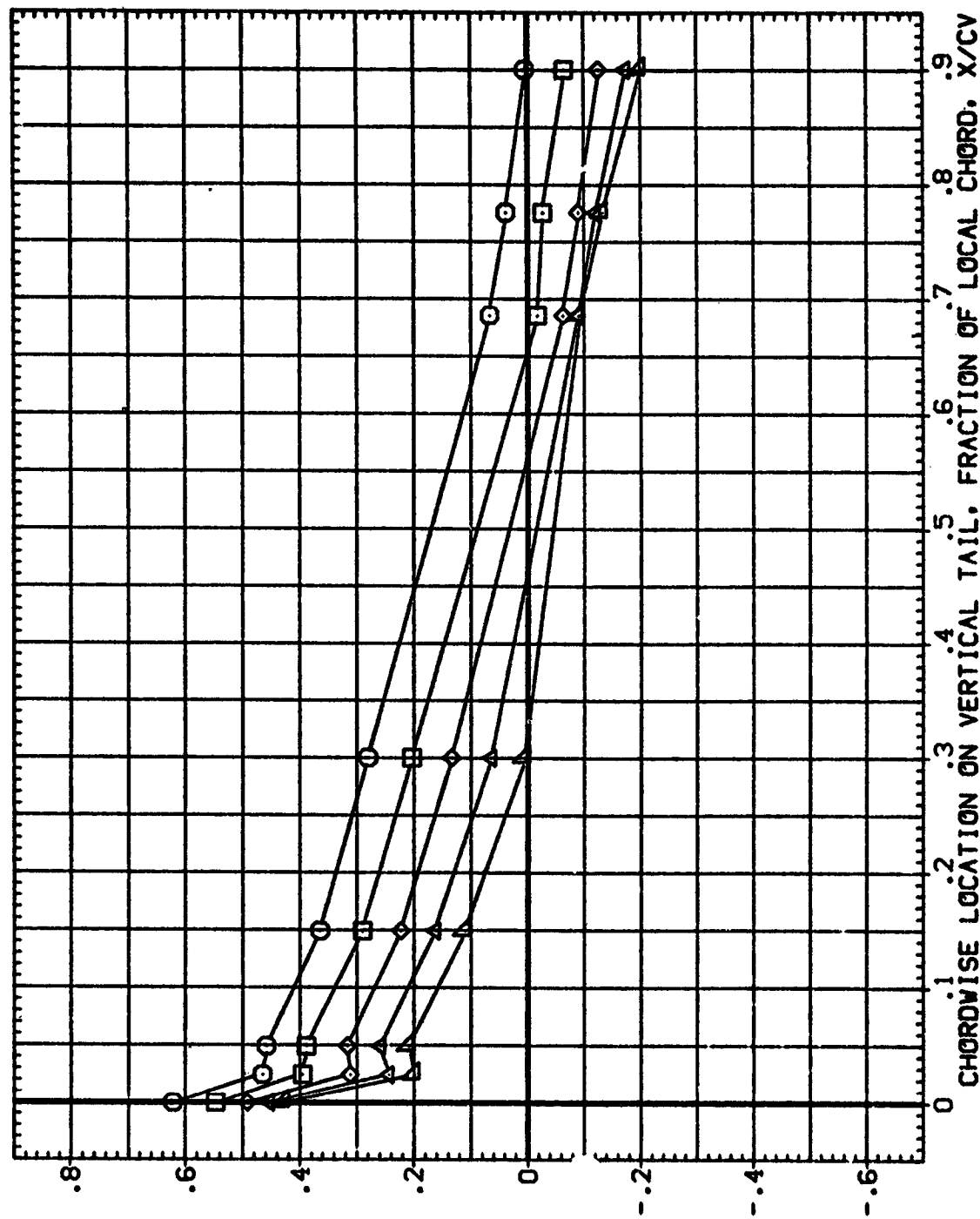


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V14)

SYMBOL
 ∇ \diamond \square Δ

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV BETA
 .600 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPEEDRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

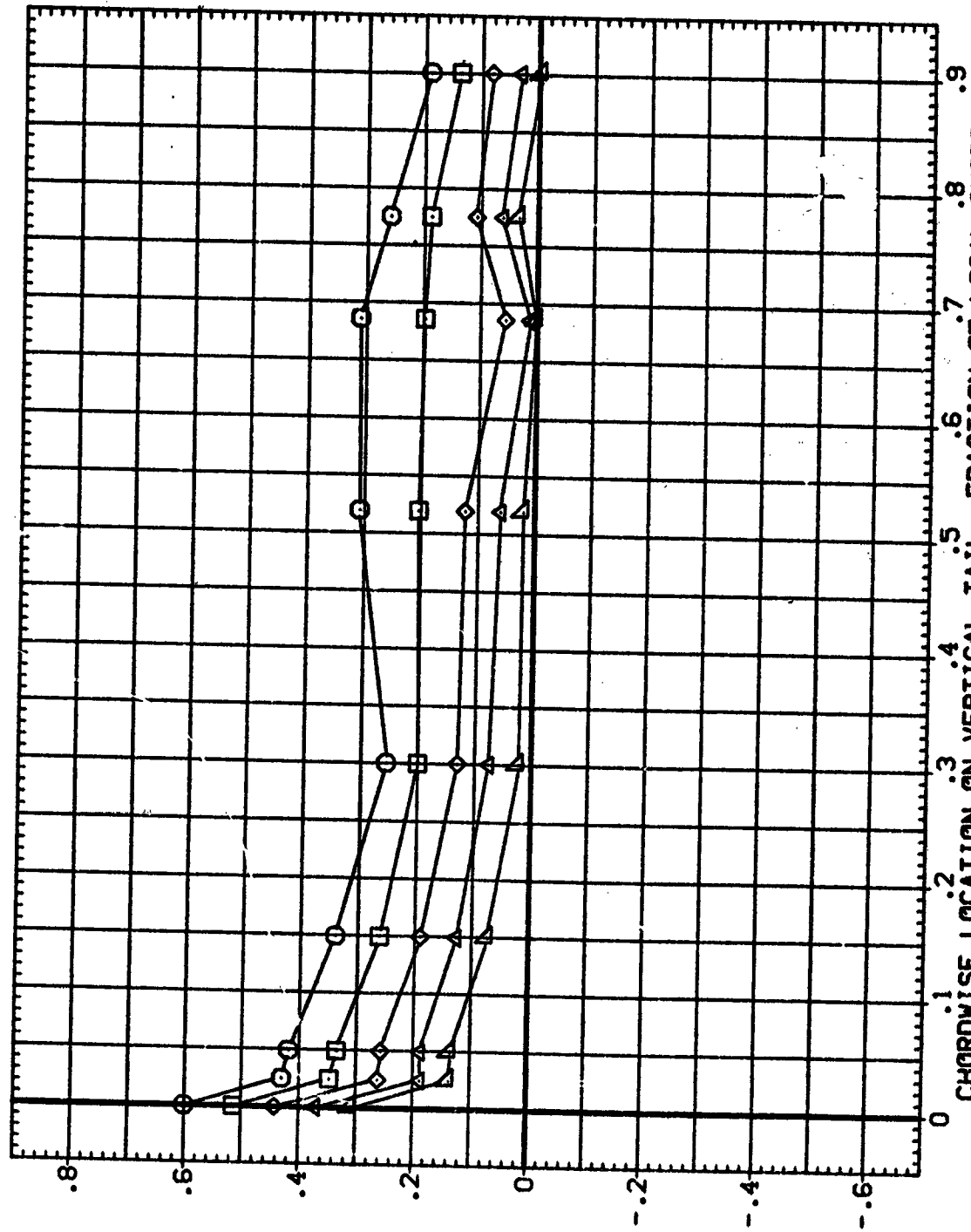


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V14)

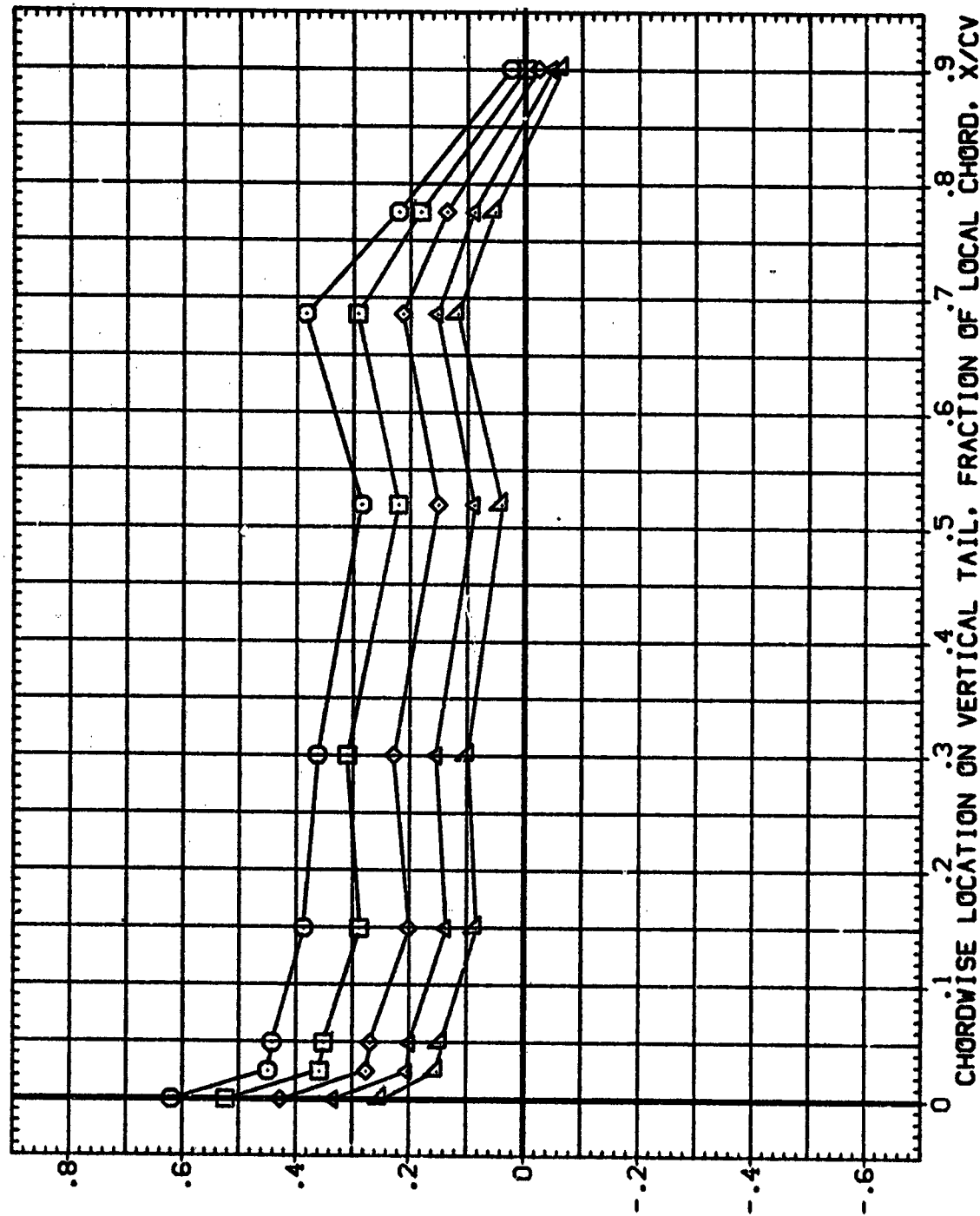
SYMBOL
 ○
 □
 ◇
 △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .840

BETA
 -4.000

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 35.000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V14)

SYMBOL
 ○ □ ◇ △

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925

BETA
 -4.000

PARAMETRIC VALUES
 RUBBER .000 SPDRBK 35.000
 BDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

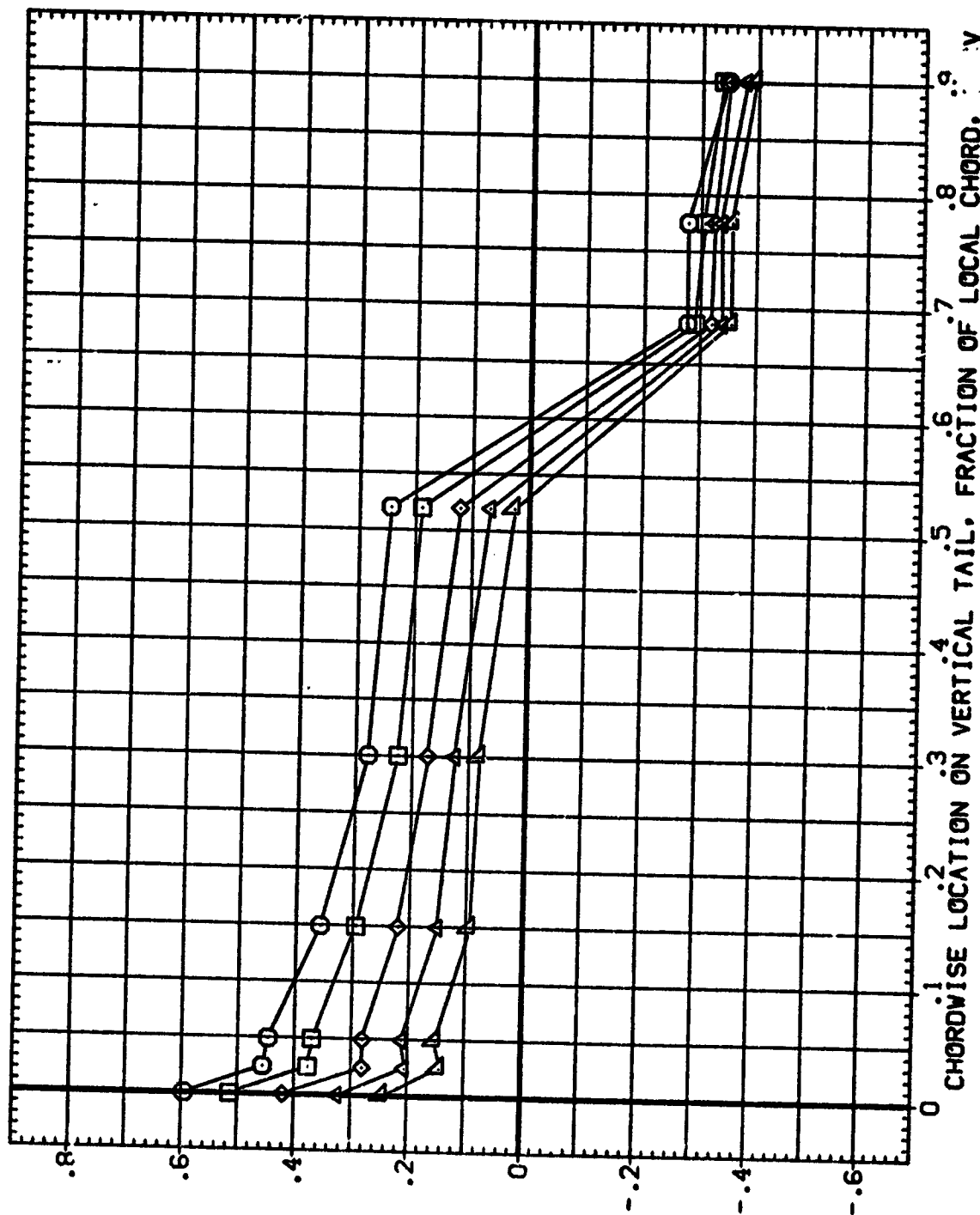


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V14)

SYMBOL	ALPHA	Z/BV	BETA	RUDER	PARAMETRIC VALUES		
○	-4.000	.316	.000	BDFLAP	.000		
□	.000			R-ELVN	.000		
◇	4.000				L-ELVN	.000	
△	8.000				MACH	1.250	
▽	12.000						35.000

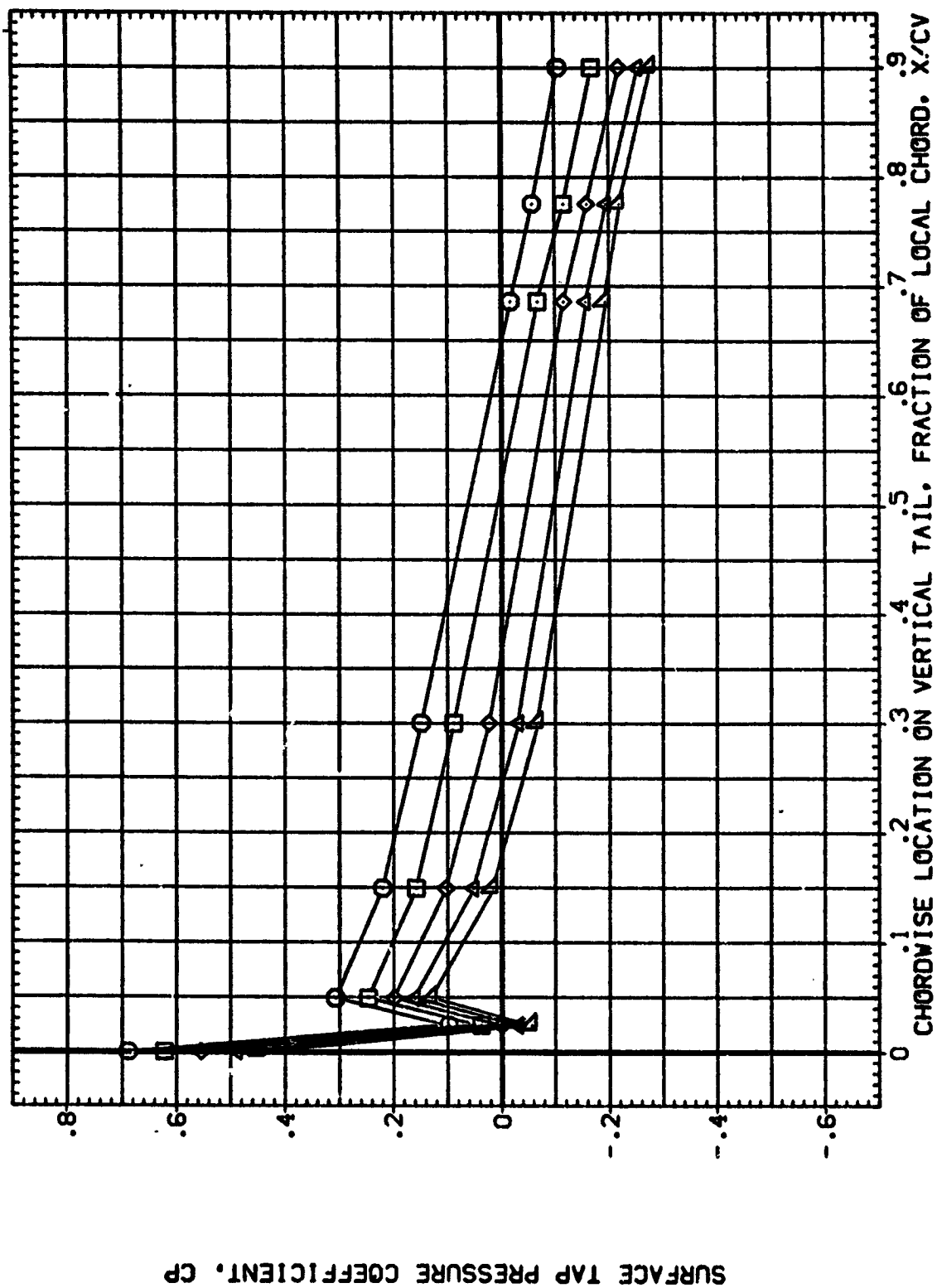


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 ○
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600
 .000

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPEEDBRK 35.000
 80°FLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

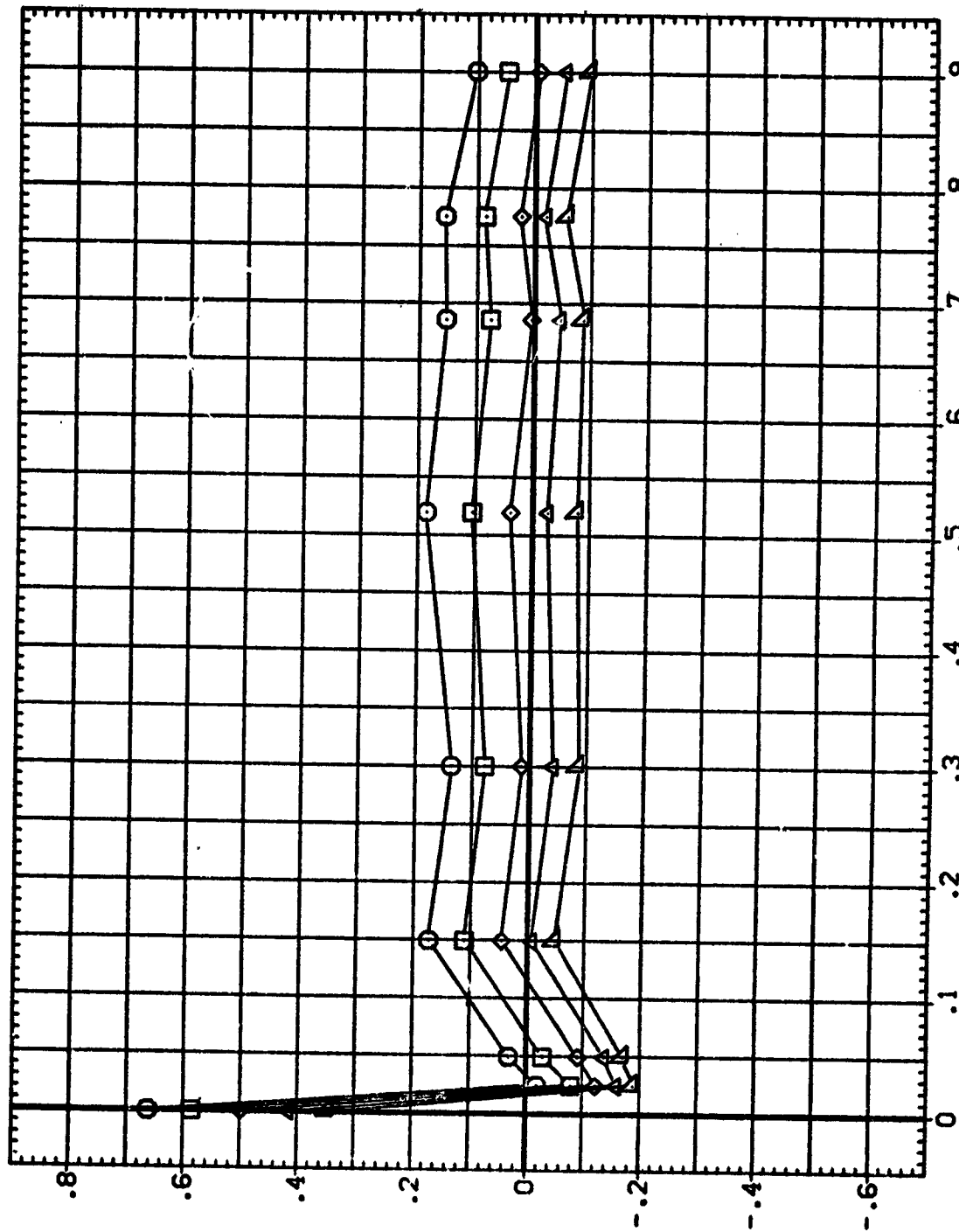


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V14)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES	
▽	-4.000	.840	.000	BOFLAP	.000	SPDRBK
◇	.000			R-ELVN	.000	L-ELVN
□	4.000				.000	MACH
△	8.000					1.250
	12.000					

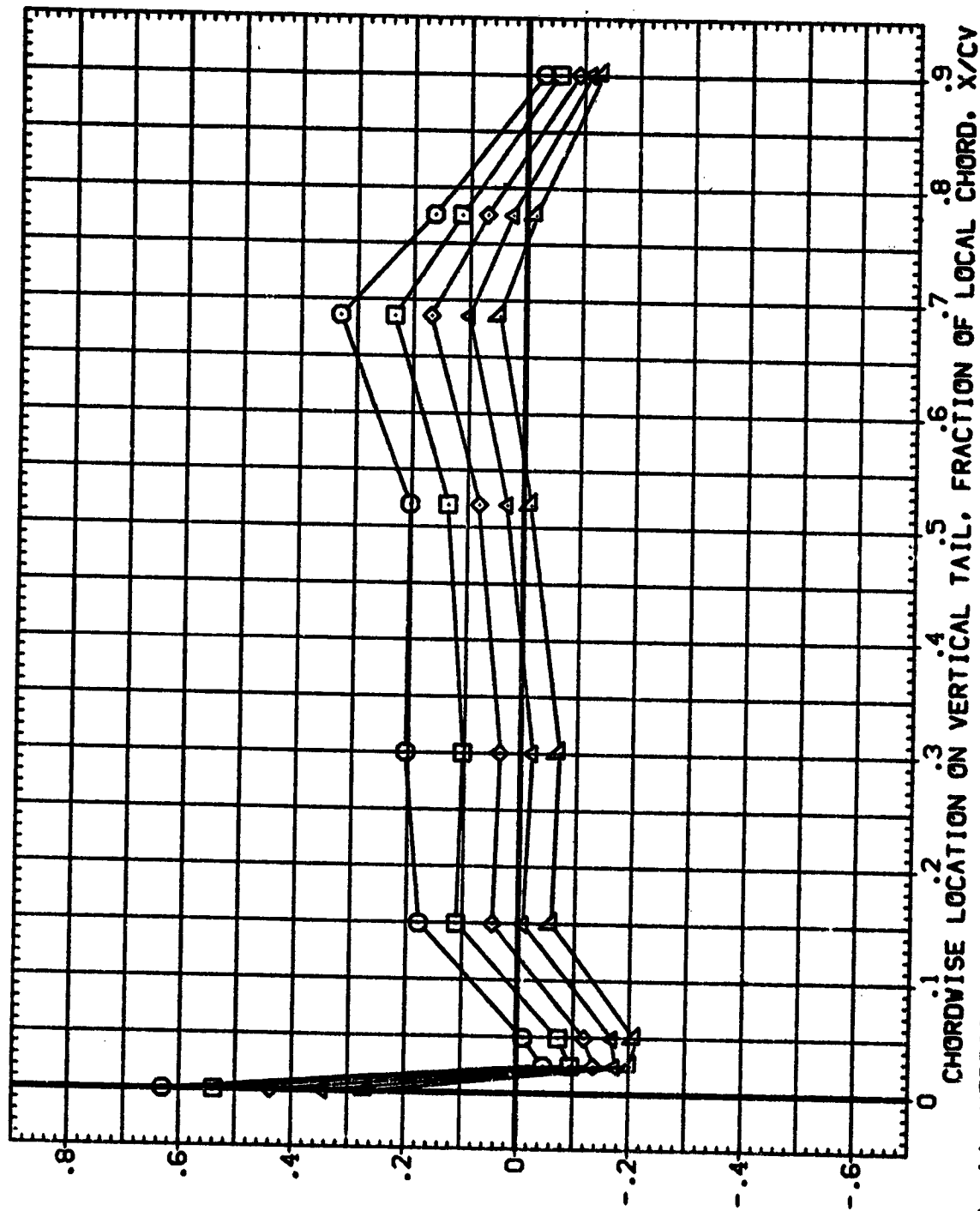


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V14)

SYMBOL
 □
 ◇
 △
 ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .925

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 SDFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

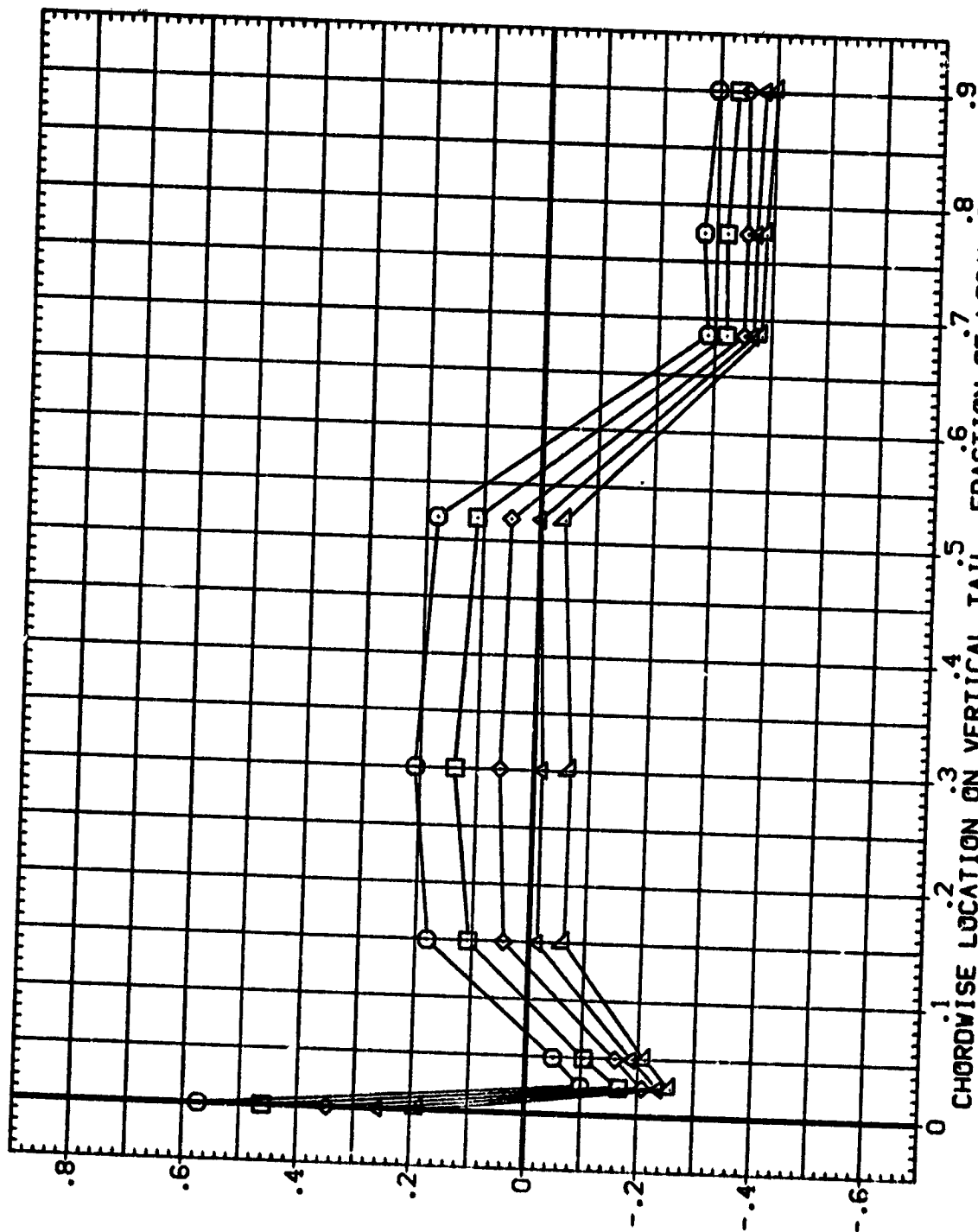


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL. FRACTION OF LOCAL CHORD. X/CV

REPRODUCIBILITY OF THE
 ORIGINAL PAGE IS POOR

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V14)

SYMBOL	ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
○	-4.000	.316	4.000	BOFLAP	.000 SPOBRK 35.000
□	.000			R-ELVN	.000 L-ELVN .000
◇	4.000				.000 MACH 1.250
△	8.000				
▽	12.000				

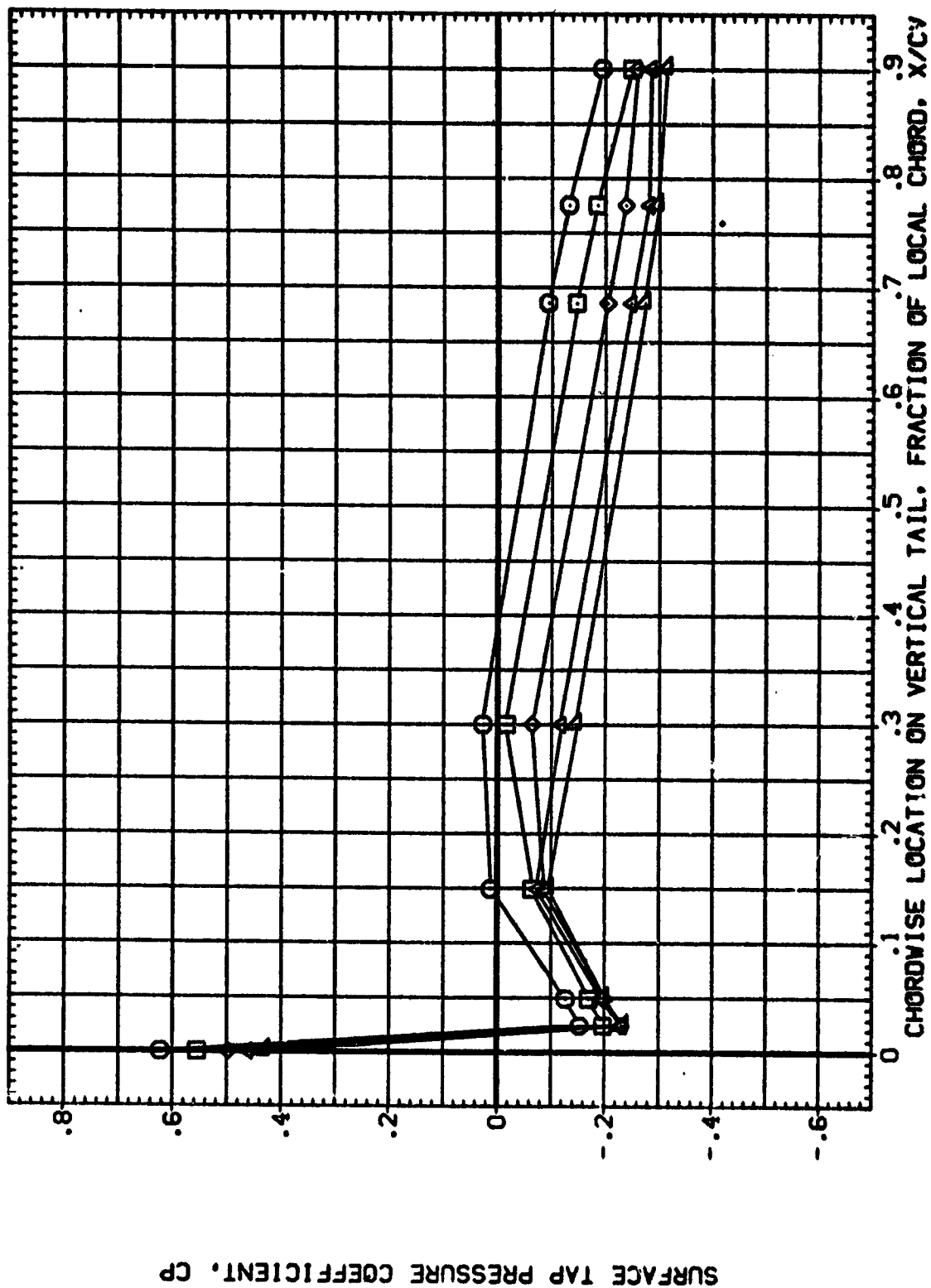


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
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 △
 ▲
 ▼

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV
 .600

BETA
 4.000

PARAMETRIC VALUES
 RUDDER
 BDFLAP
 R-ELVN

PARAMETRIC VALUES
 SPEED
 L-ELVN
 MACH

35.000
 .000
 .000
 .000
 1.250

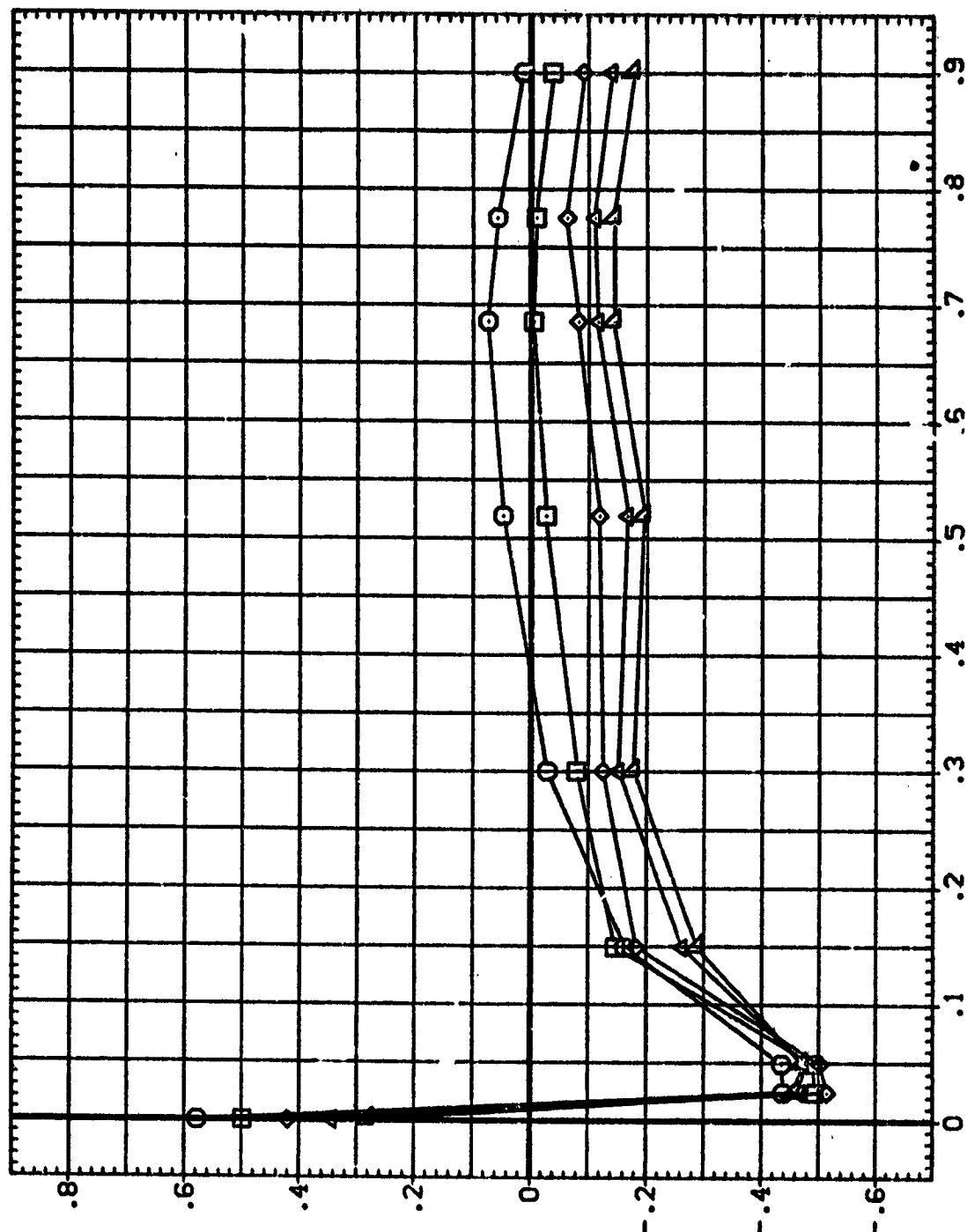


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V14)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES
▽	-4.000	.840	4.000	RUDDER .000 SPEEDRY 35.000
◇	.000			BOFLAP .000 L-ELVN .000
◊	4.000			R-ELVN .000 MACH 1.250
△	8.000			
▽	12.000			

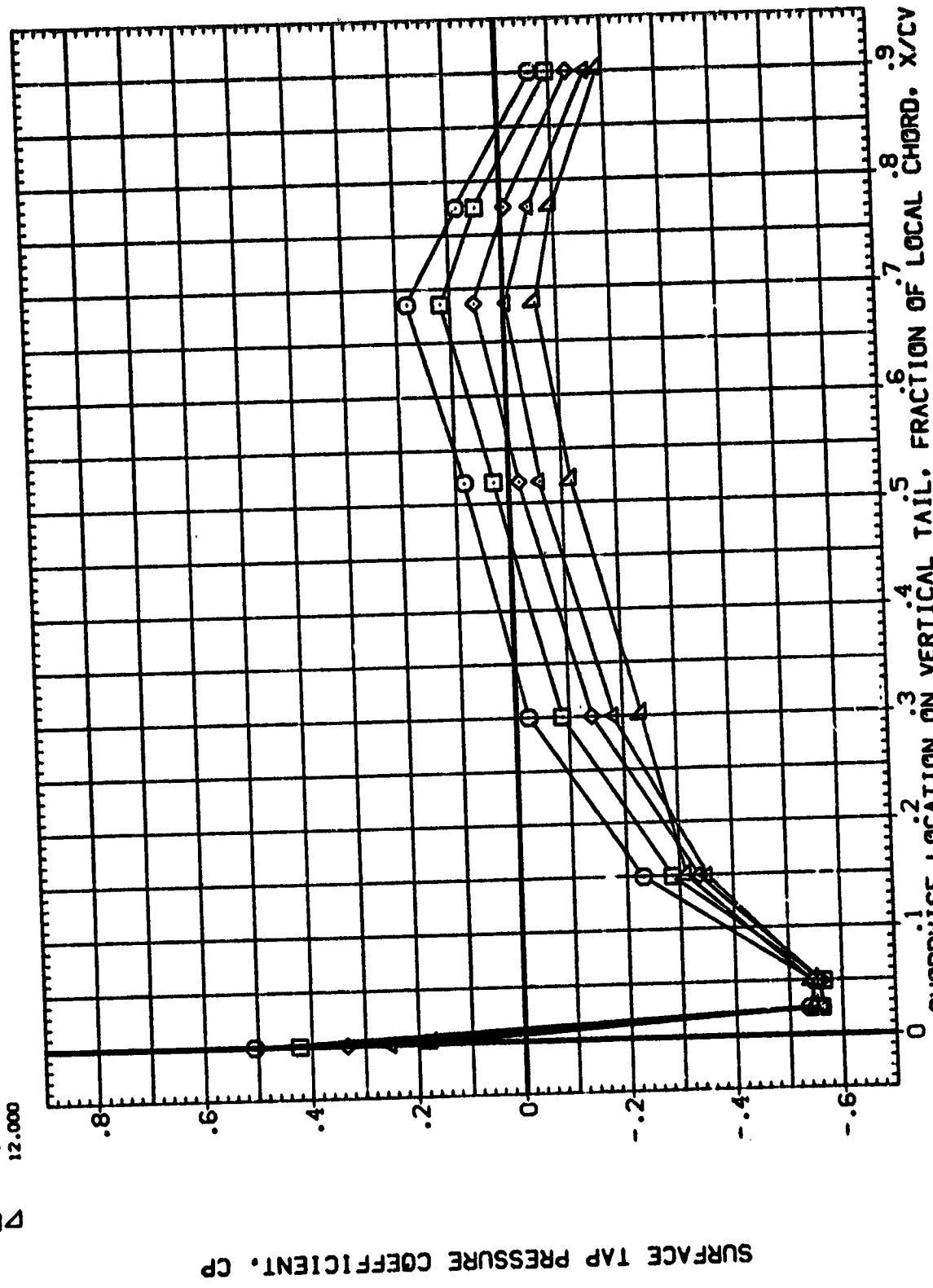


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

SYMBOL
 ▽
 ◊
 □
 ◻

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000

Z/BV BETA
 .525 4.000

PARAMETRIC VALUES
 RUDDER .000 SPEED 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.250

SURFACE TAP PRESSURE COEFFICIENT, CP

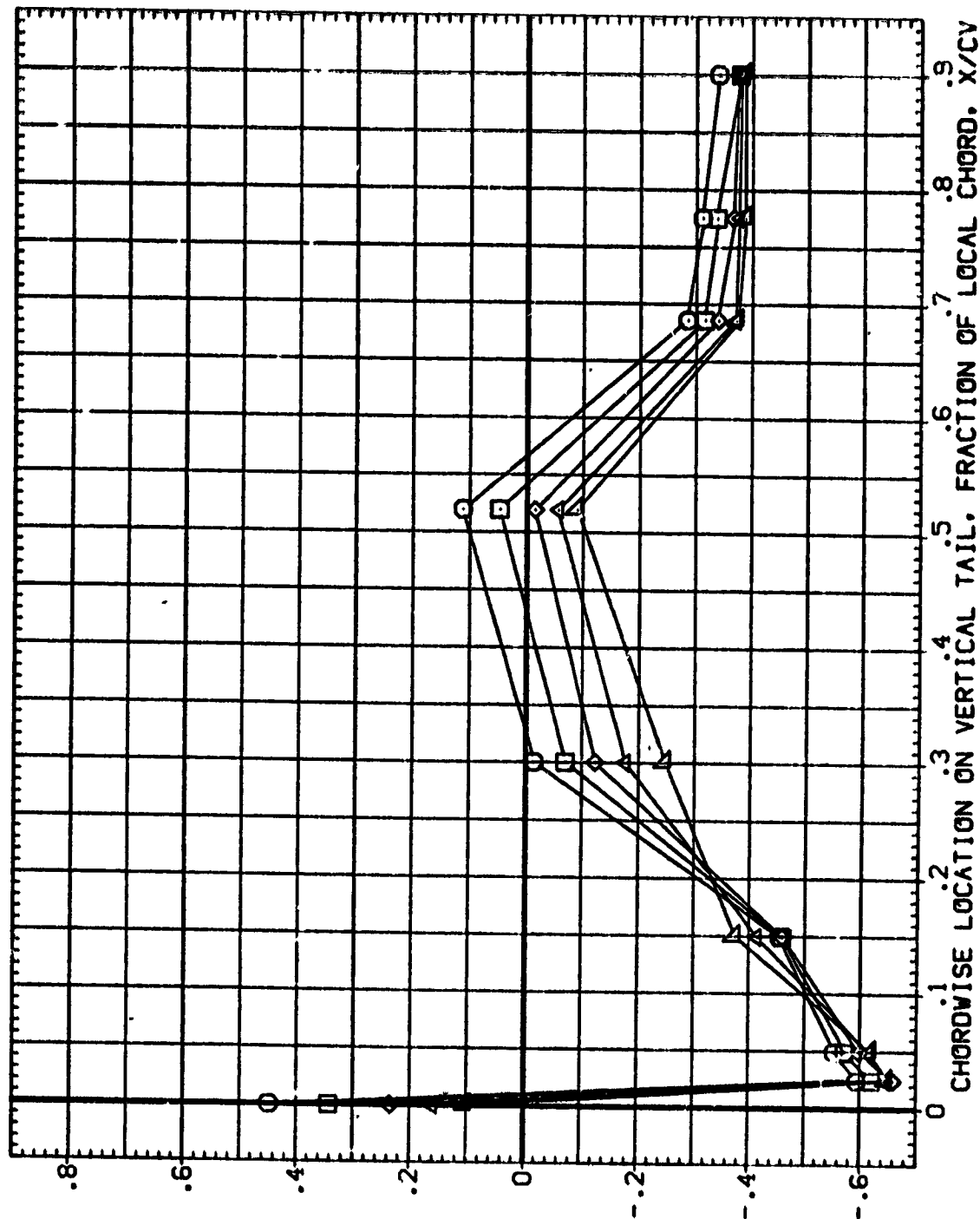


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/9/C/R ORB VERTICAL (1E8V13)

PARAMETRIC VALUES
 RUDDER .000
 BOFLAP .000
 R-ELVN .000
 SPDBRK 35.000
 L-ELVN .000
 MACH 1.400

ALPHA Z/BV BETA
 -4.000 .316 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ △ ▽

SURFACE TAP PRESSURE COEFFICIENT, CP

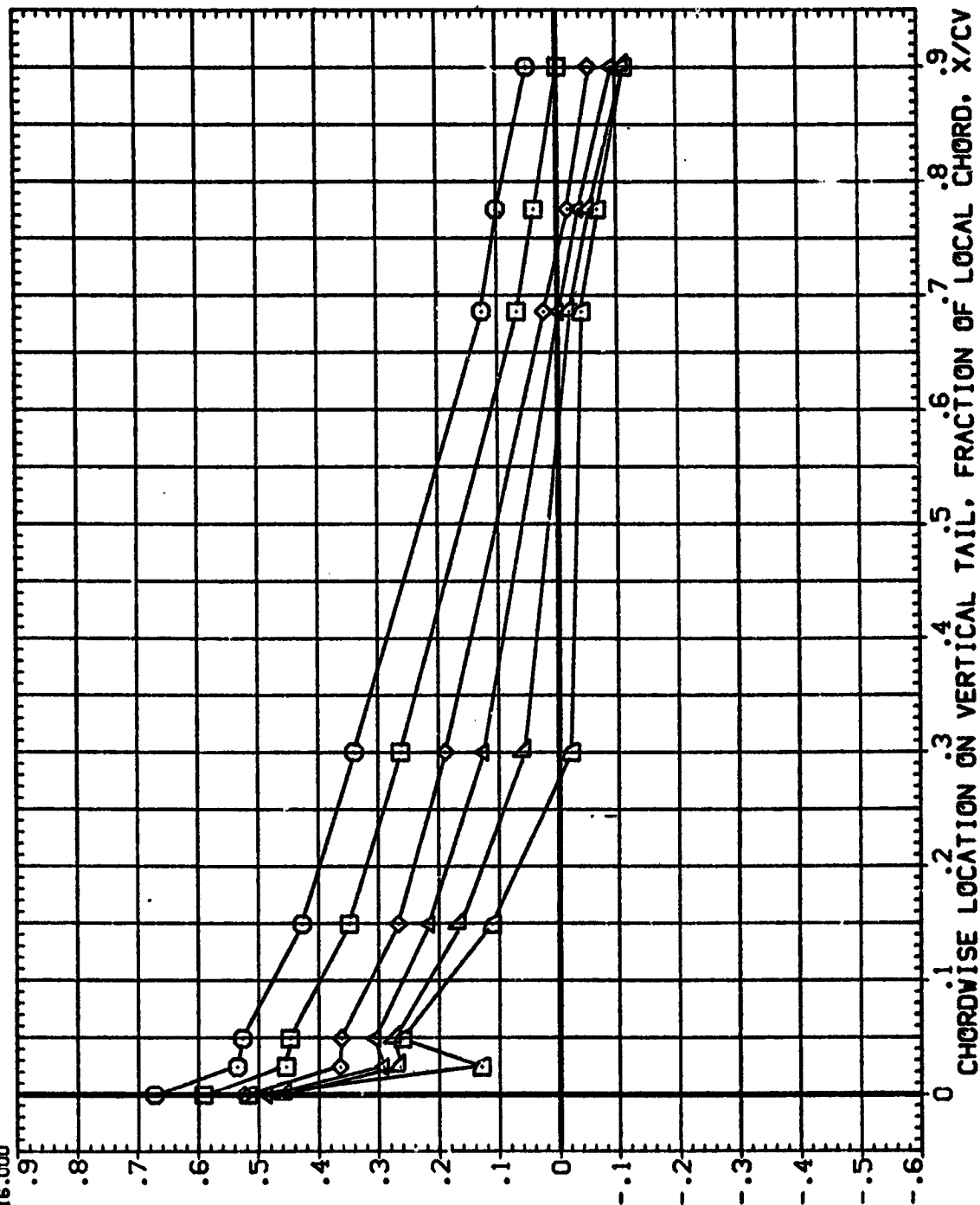


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

(1E8V13)

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL

SYMBOL
□ ▽ ◆ ◇ □ ▽

ALPHA
-4.000
.000
4.000
8.000
12.000
16.000

Z/BV
.600

BETA
-4.000

PARAMETRIC VALUES

RUDDER
BOFLAP
R-ELVN

35.000
.000
1.400

.000
.000
.000

SPDBRK
L-ELVN
MACH

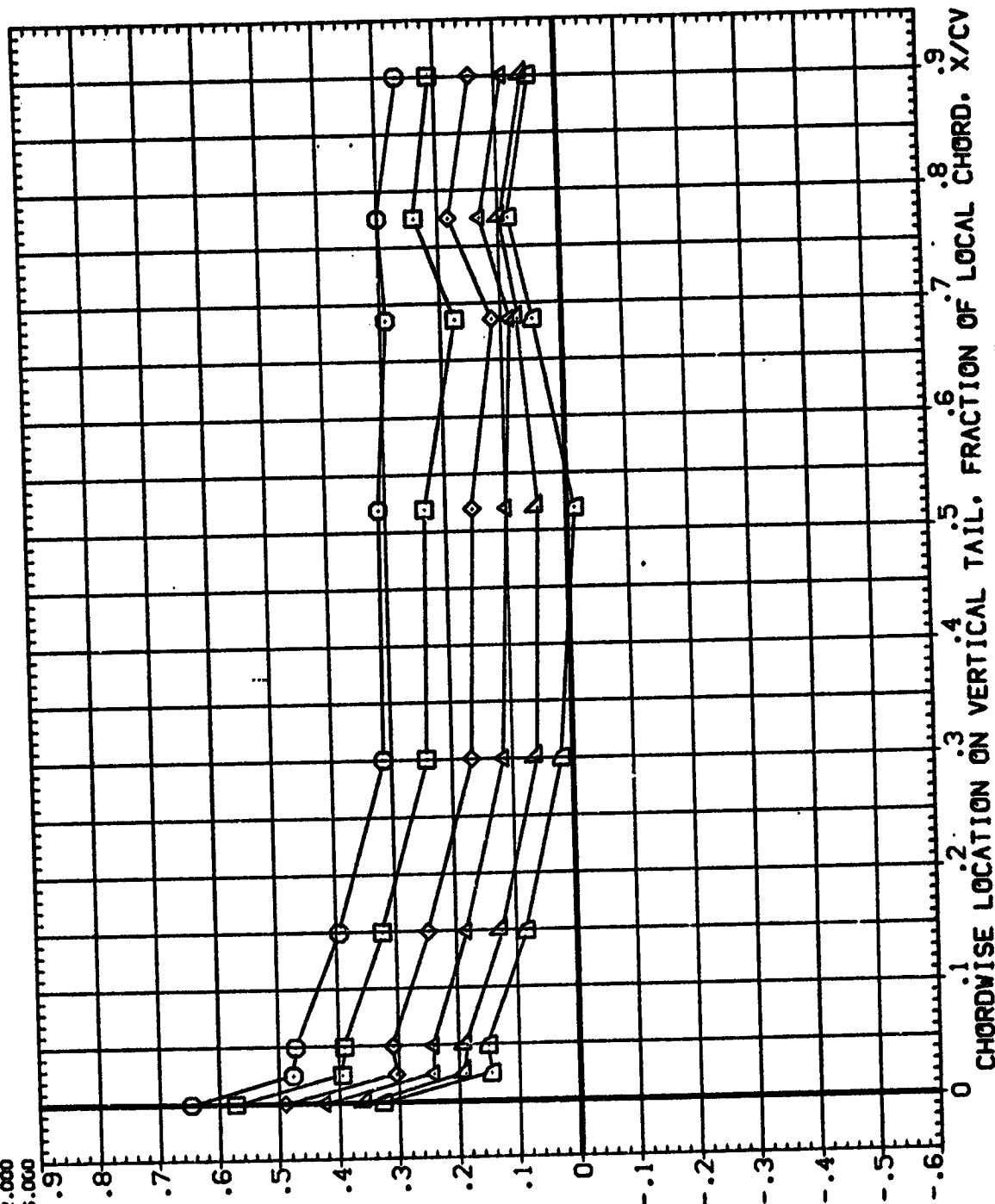


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V13)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRK	L-ELVN	HACH
○	-4.000	.840	-4.000	80FLAP	.000	.000	35.000
□	.000			R-ELVN	.000	.000	.000
◇	4.000						1.400
△	8.000						
▽	12.000						
▽	16.000						

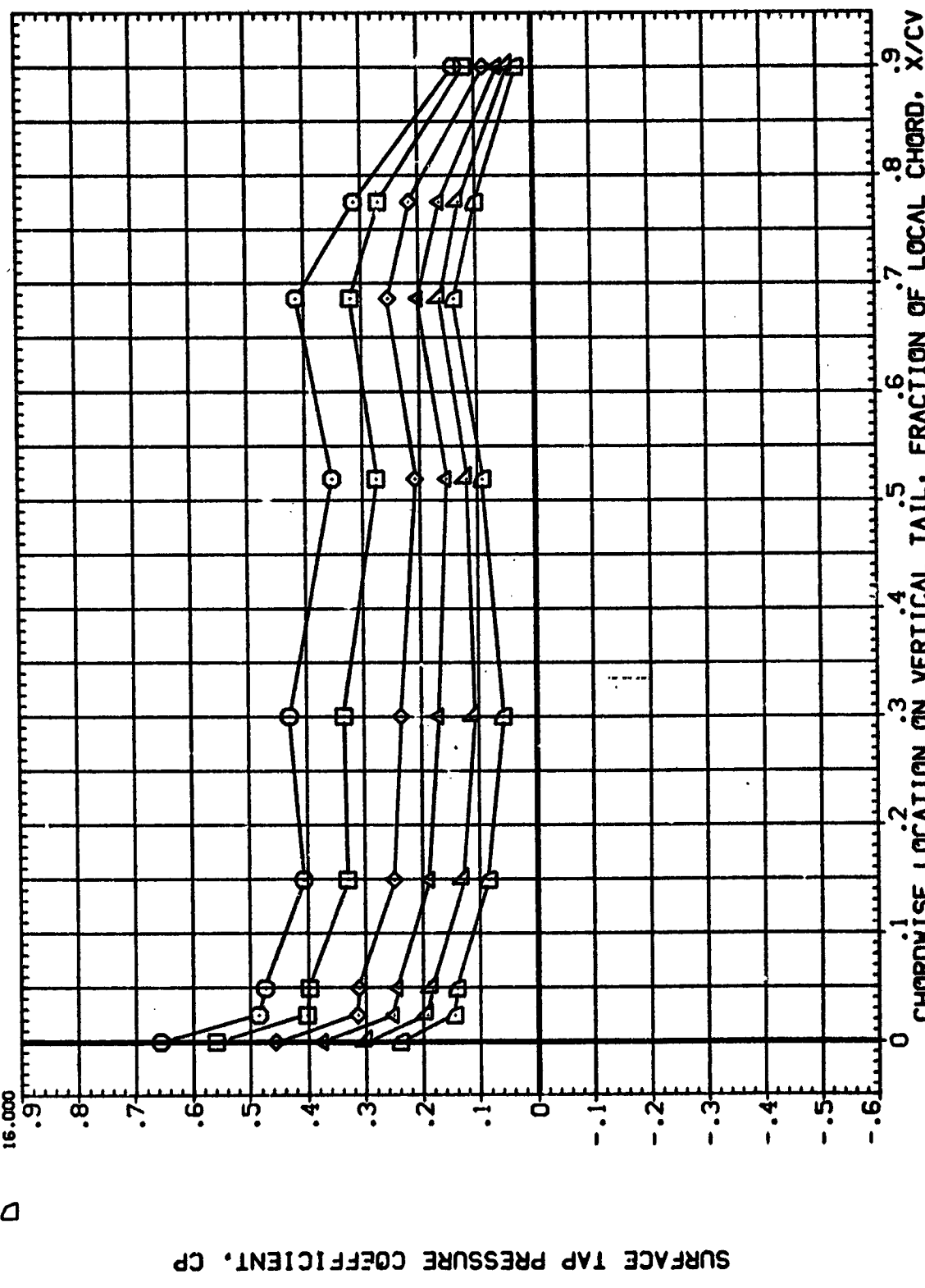


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

SYMBOL ALPHA Z/BV BETA
 □ -4.000 .925 -4.000
 ◇ -4.000 .000
 △ -4.000 4.000
 ▽ -4.000 8.000
 ▽ -4.000 12.000
 ▽ -4.000 16.000

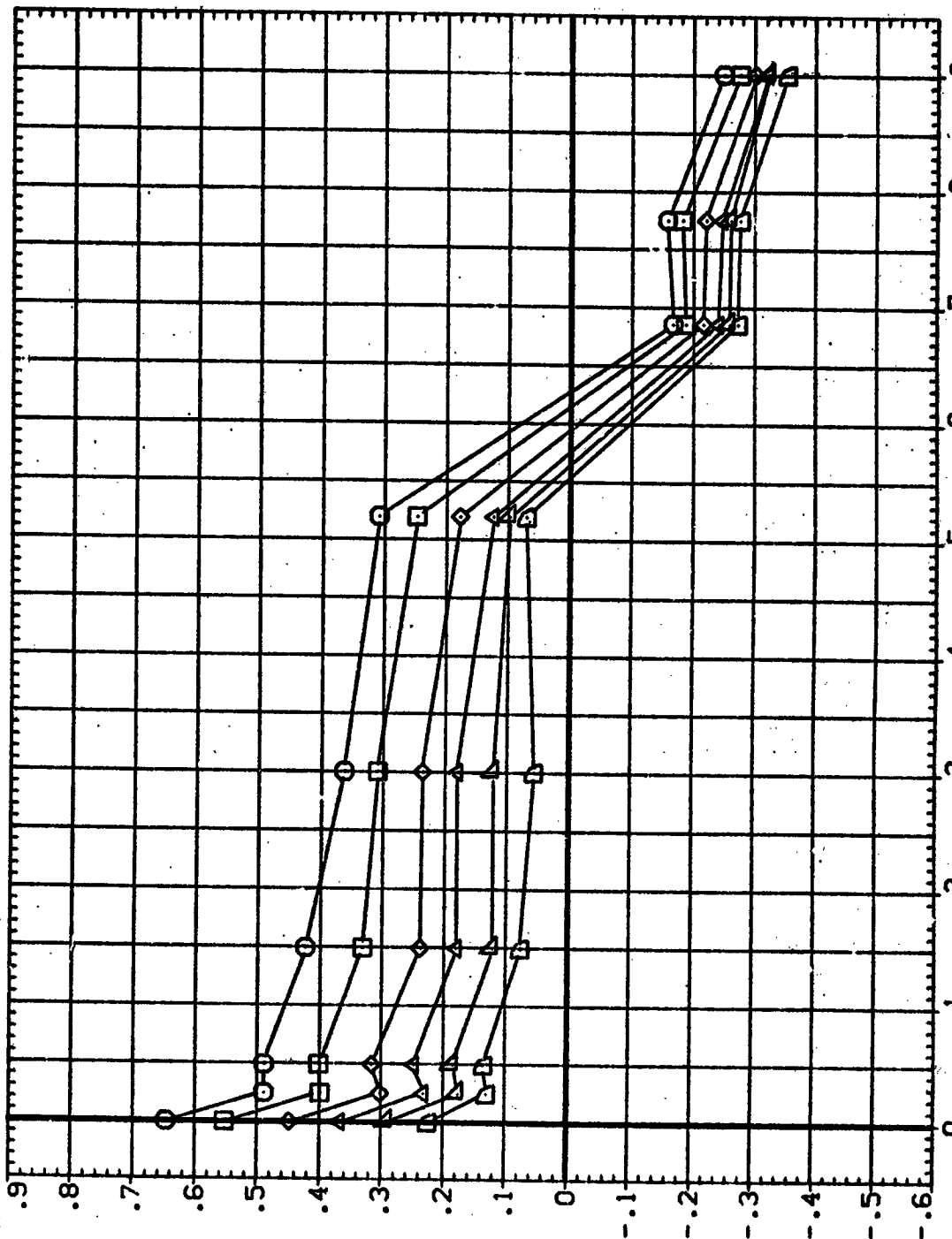


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V13)

ALPHA	Z/BV	BETA	RUDDER	PARAMETRIC VALUES
-4.000	.316	.000	BDFLAP	.000
4.000			R-ELVN	.000
8.000				MACH
12.000				35.000
16.000				1.400

SYMBOL
 ▽ ▴ ◊ □

SURFACE TAP PRESSURE COEFFICIENT, CP

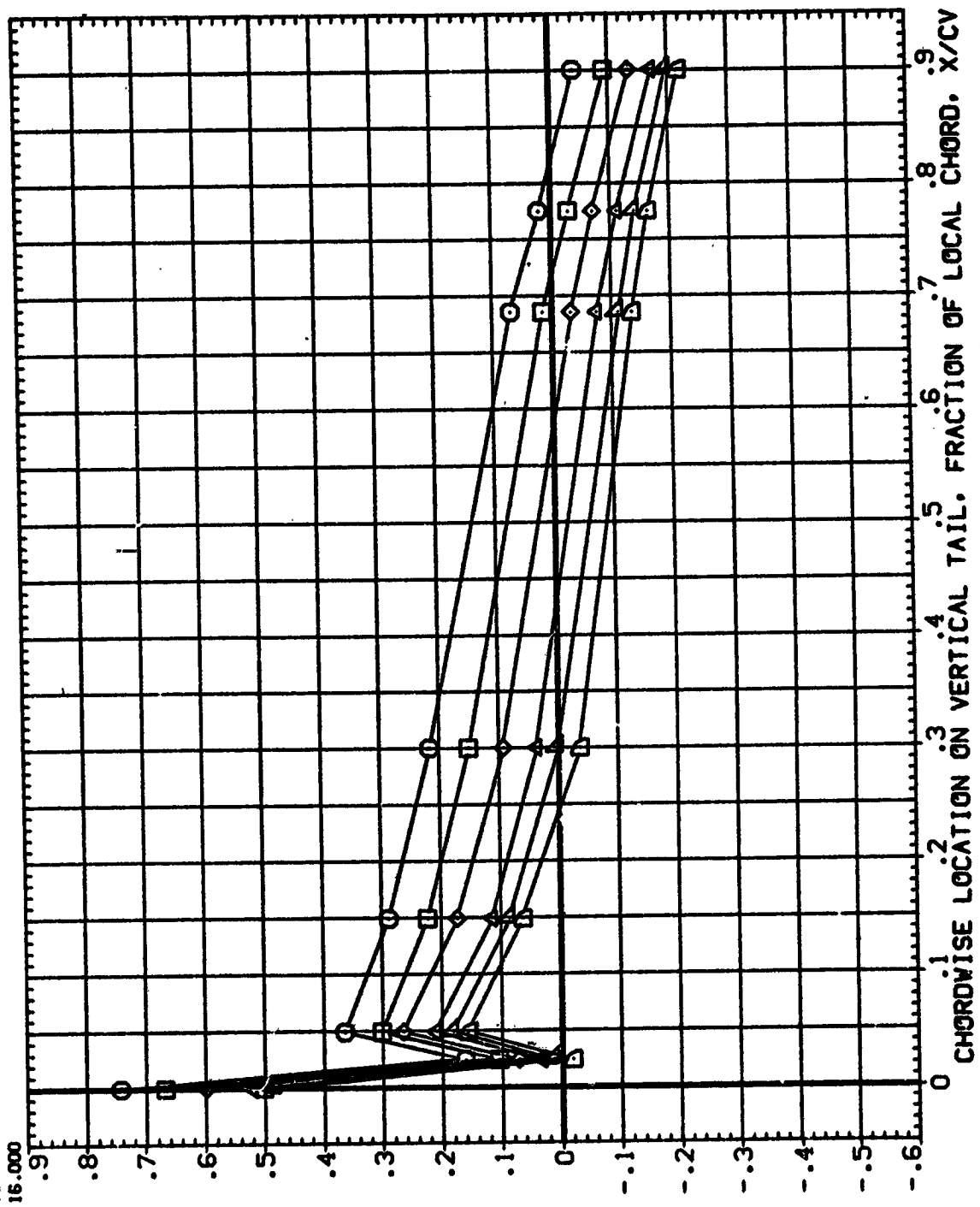


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

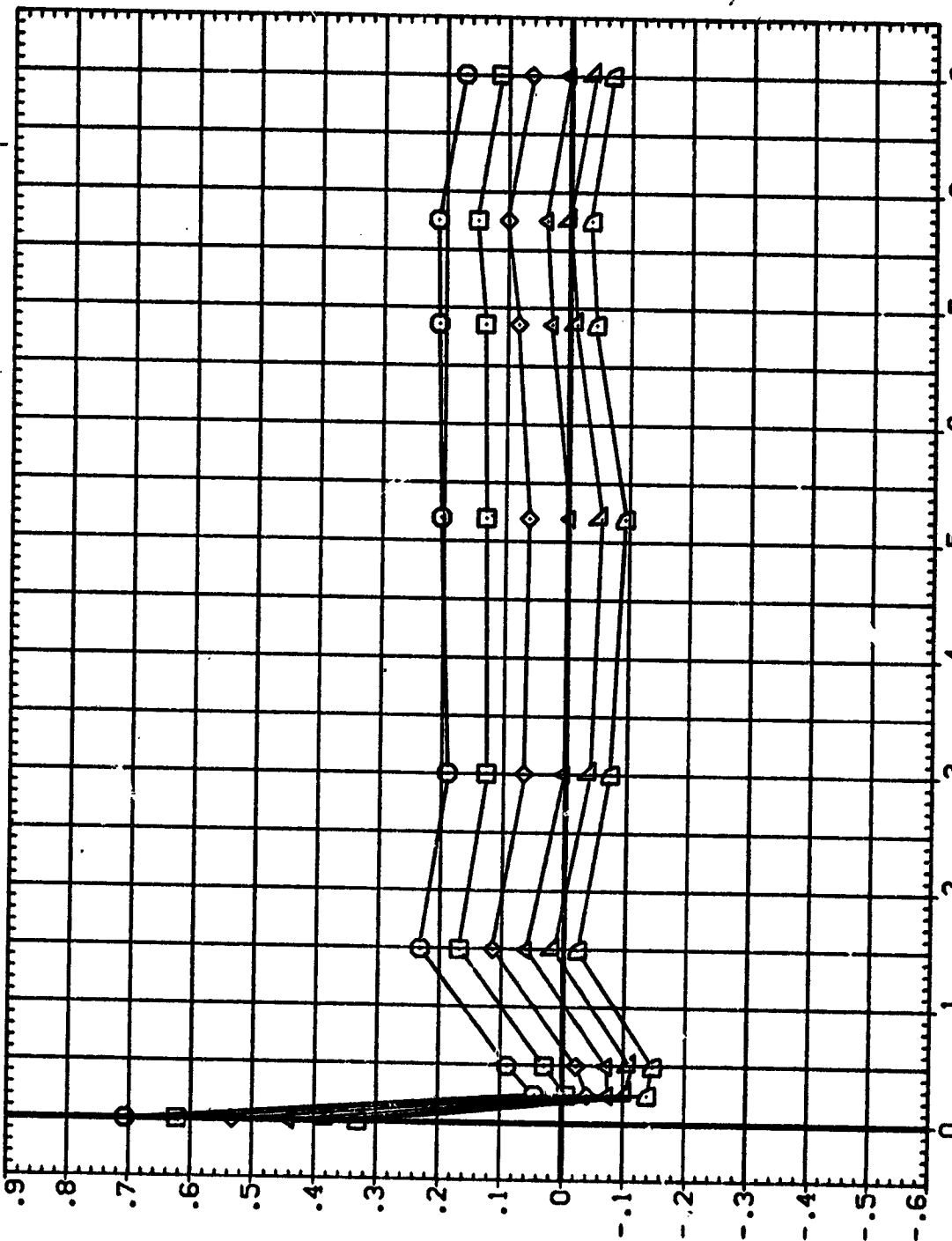
SYMBOL
 ▽ ▴ ◊ □ ○

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV
 .600

BETA
 .000

PARAMETRIC VALUES
 RUDDER .000 SPDRBK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400



SURFACE TAP PRESSURE COEFFICIENT, CP

FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL, FRACTION OF LOCAL CHORD, X/CV

AMES 11-073(OA148) -140A/B/C/R ORB VERTICAL (IE8V13)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRBK	L-ELVN	MACH
□	-4.000	.840	.000	BDFLAP	.000	.000	.000
◇	4.000			R-ELVN	.000	.000	1.400
△	8.000						
▽	12.000						
○	16.000						

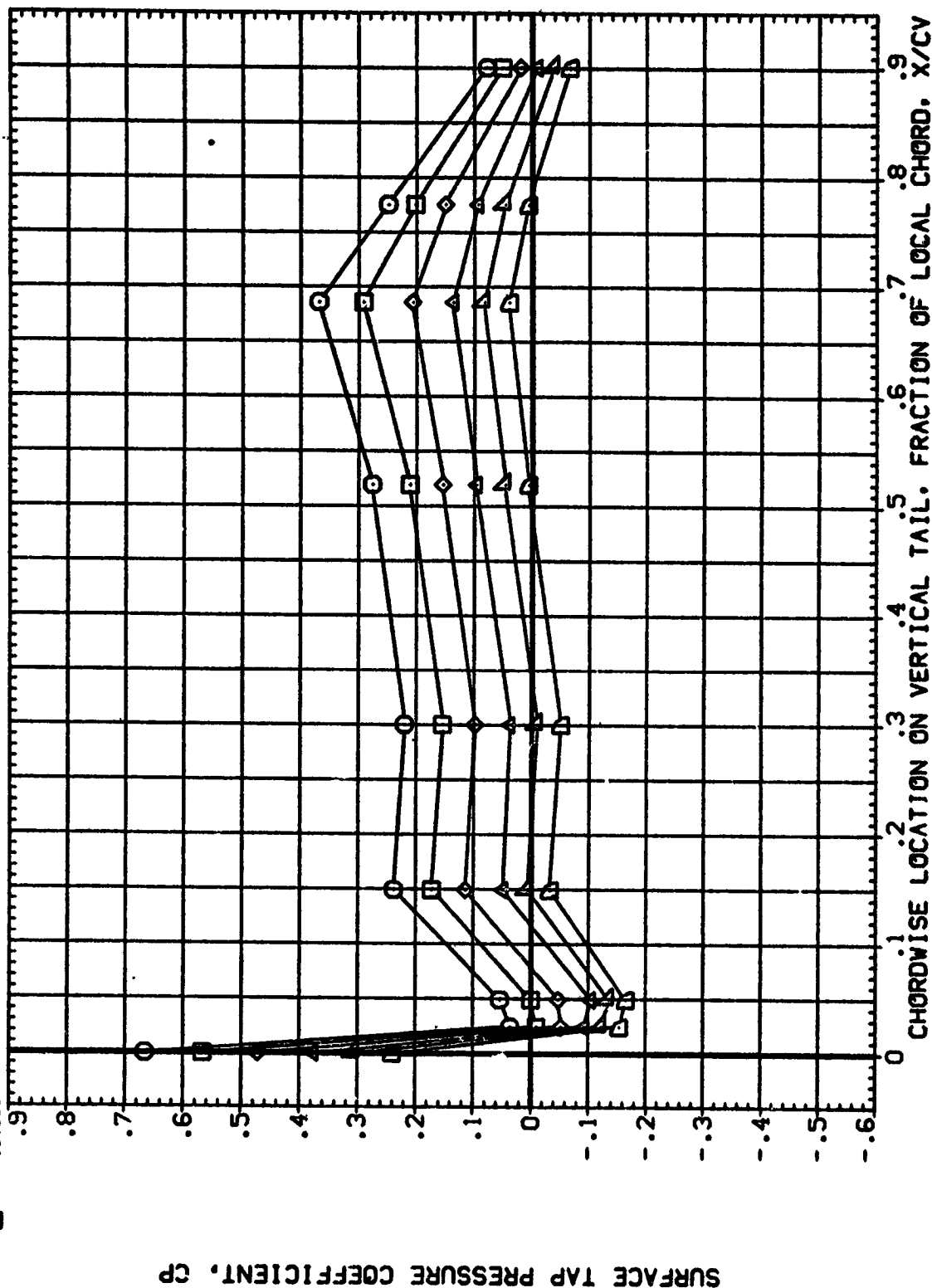


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V13)

PARAMETRIC VALUES
 RUDDER .000 SPOBRK 35.000
 BOFLAP .000 L-ELVN .000
 R-ELVN .000 MACH 1.400

ALPHA Z/BV BETA
 -4.000 .925 .000
 4.000
 8.000
 12.000
 16.000

SYMBOL
 □ ◇ △ ▽ ▹ ▸

SURFACE TAP PRESSURE COEFFICIENT, CP

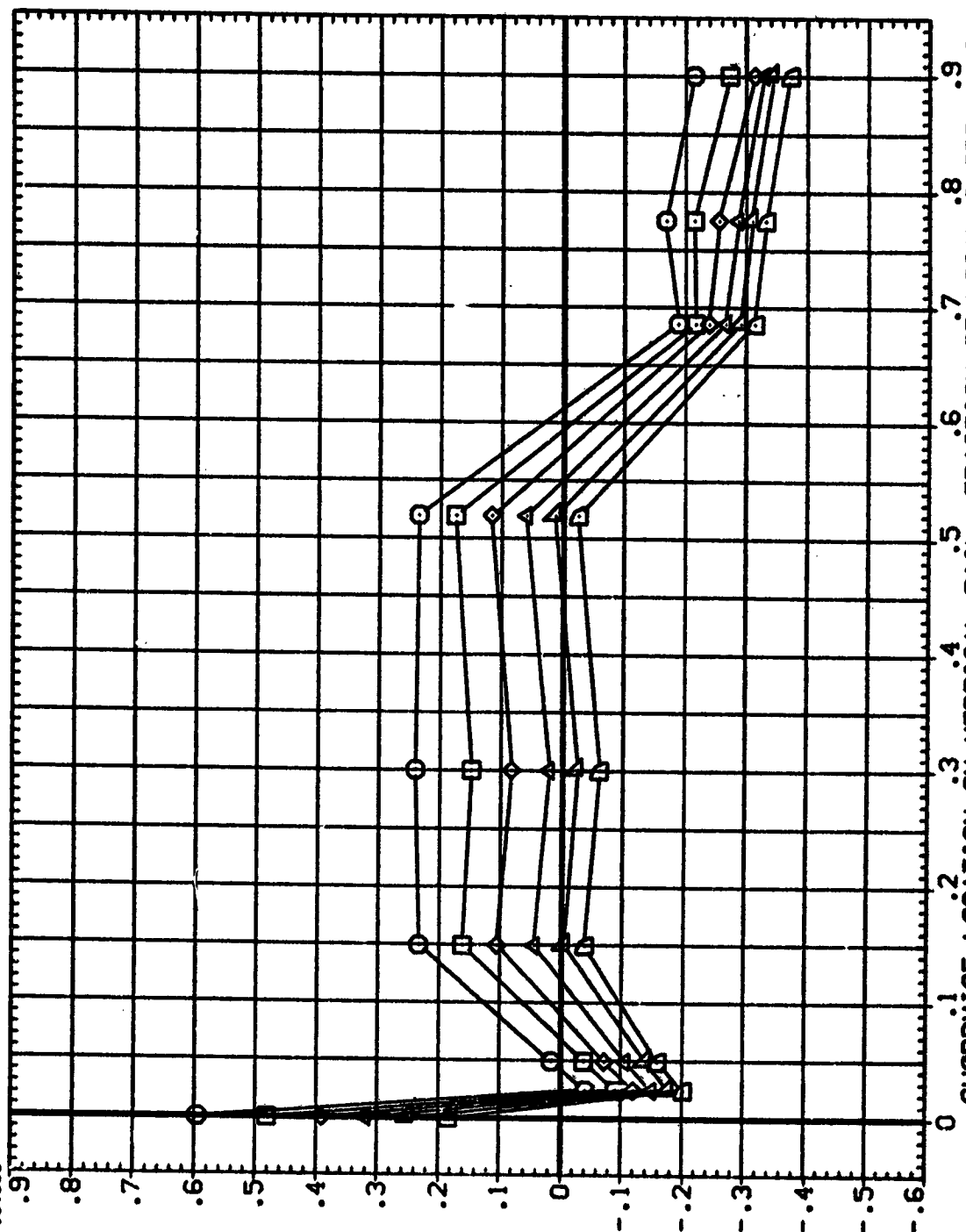


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES
 CHORDWISE LOCATION ON VERTICAL TAIL. FRACTION OF LOCAL CHORD. X/CV

AMES 11-073(0A148) - 140A/B/C/R ORB VERTICAL

(1E8V13)

PARAMETRIC VALUES	
.000	SPDRBK
.000	L-ELVN
.000	HACH
35.000	
.000	
1.400	

RUDDER
BOFLAP
R-ELVN

ALPHA	Z/BV	BETA
-4.000	.316	4.000

Symbol 

ALPHA
-4.000
.000
4.000
8.000
12.000
16.000

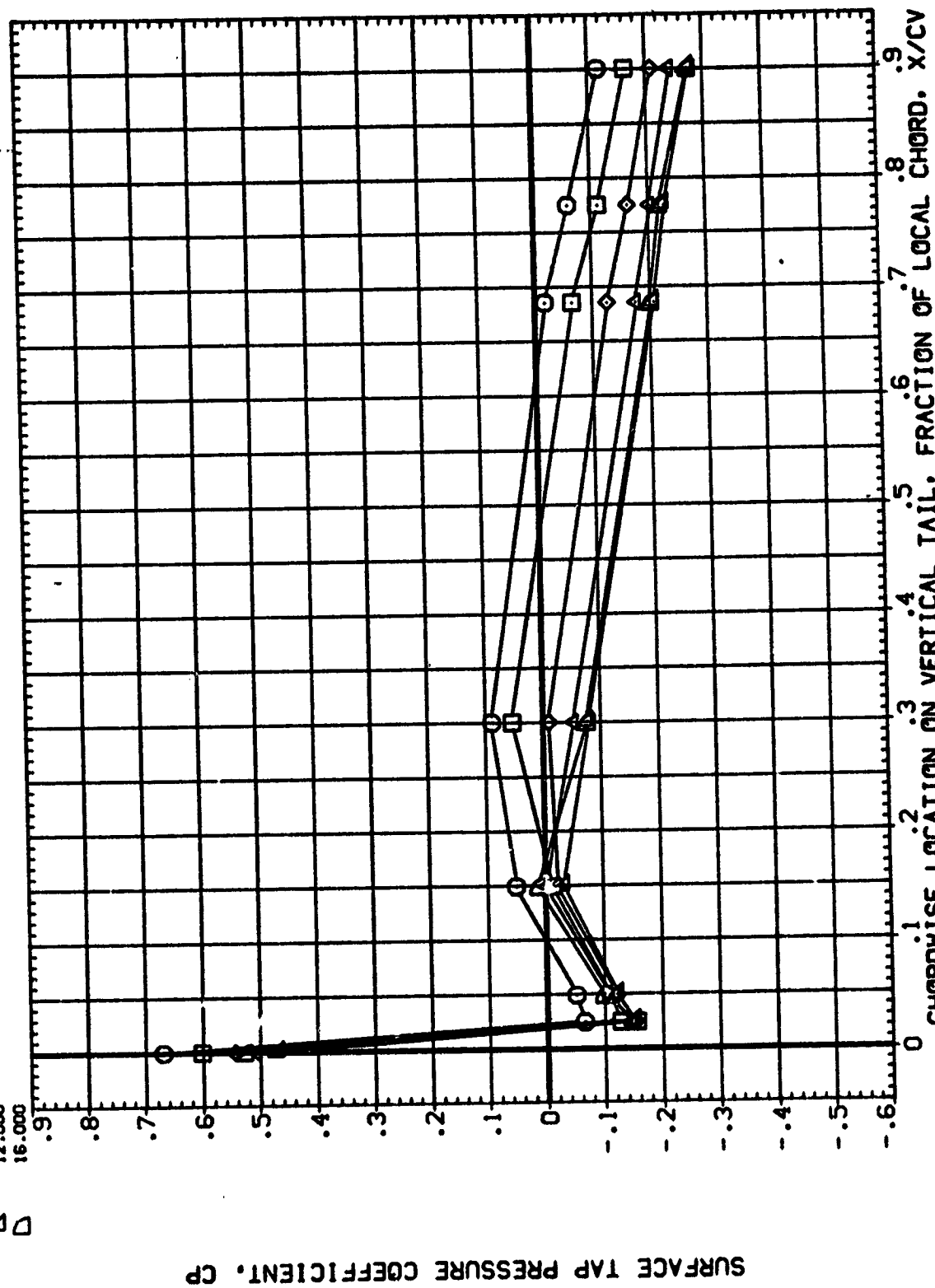


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (1E8V13)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	SPDRBK	L-ELVN	MACH
□	-4.000	.600	4.000	BOFLAP	.000	.000	35.000
◇	4.000			R-ELVN	.000	.000	1.400
△	8.000						
▽	12.000						
○	16.000						

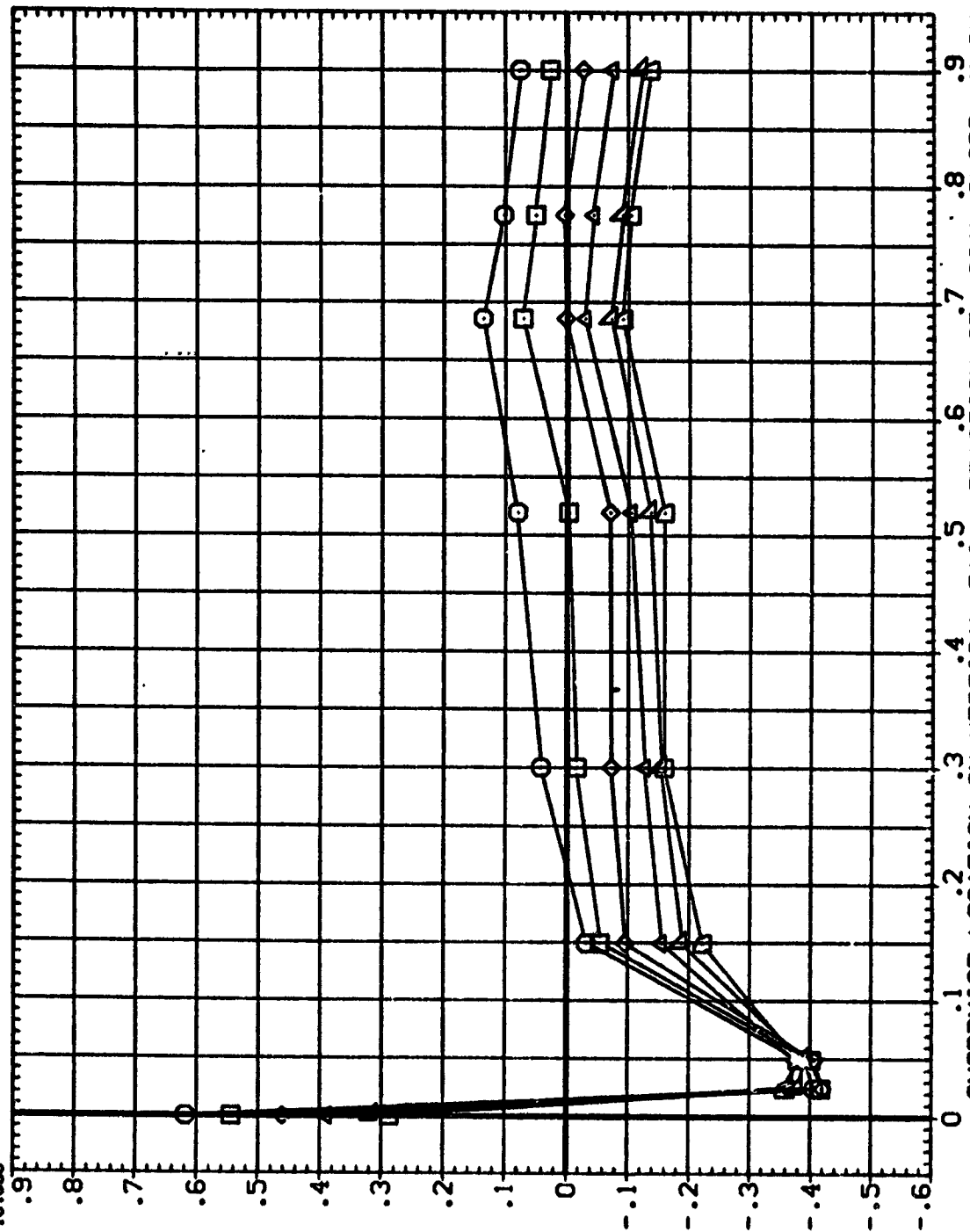


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V13)

SYMBOL	ALPHA	Z/BV	BETA	PARAMETRIC VALUES			
				RUDDER	BOFLAP	R-ELVN	SPDRBK
□	-4.000	.840	4.000				35.000
◇	.000						.000
△	4.000						.000
▽	8.000						1.400
◊	12.000						
◻	16.000						

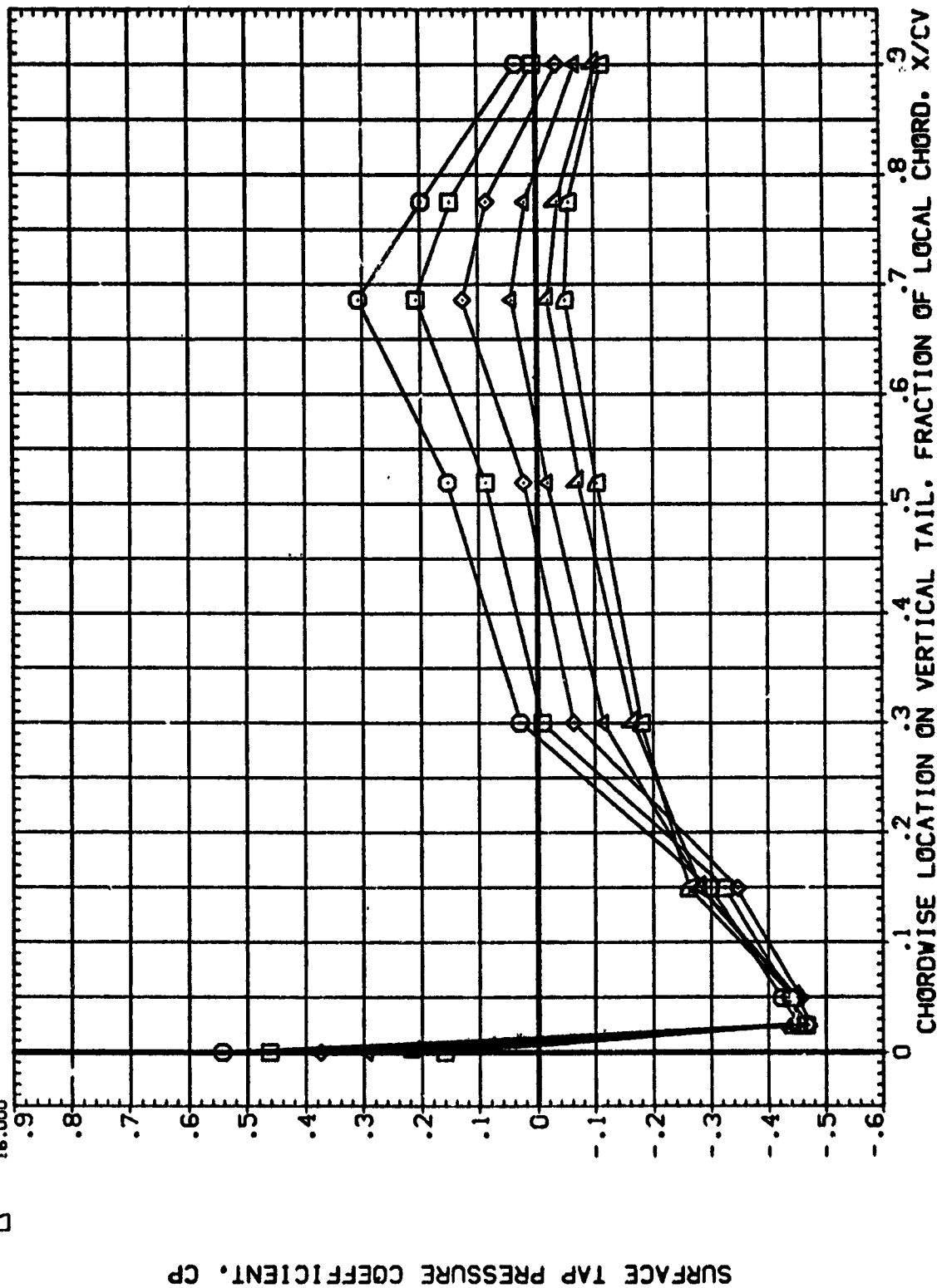


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES

AMES 11-073(0A148) -140A/B/C/R ORB VERTICAL (IE8V13)

SYMBOL
 □ ◇ △ ▽

ALPHA
 -4.000
 .000
 4.000
 8.000
 12.000
 16.000

Z/BV .925

BETA 4.000

PARAMETRIC VALUES

RUDDER	SPDBRK	35.000
BDFLAP	.000	.000
R-ELVN	.000	1.400

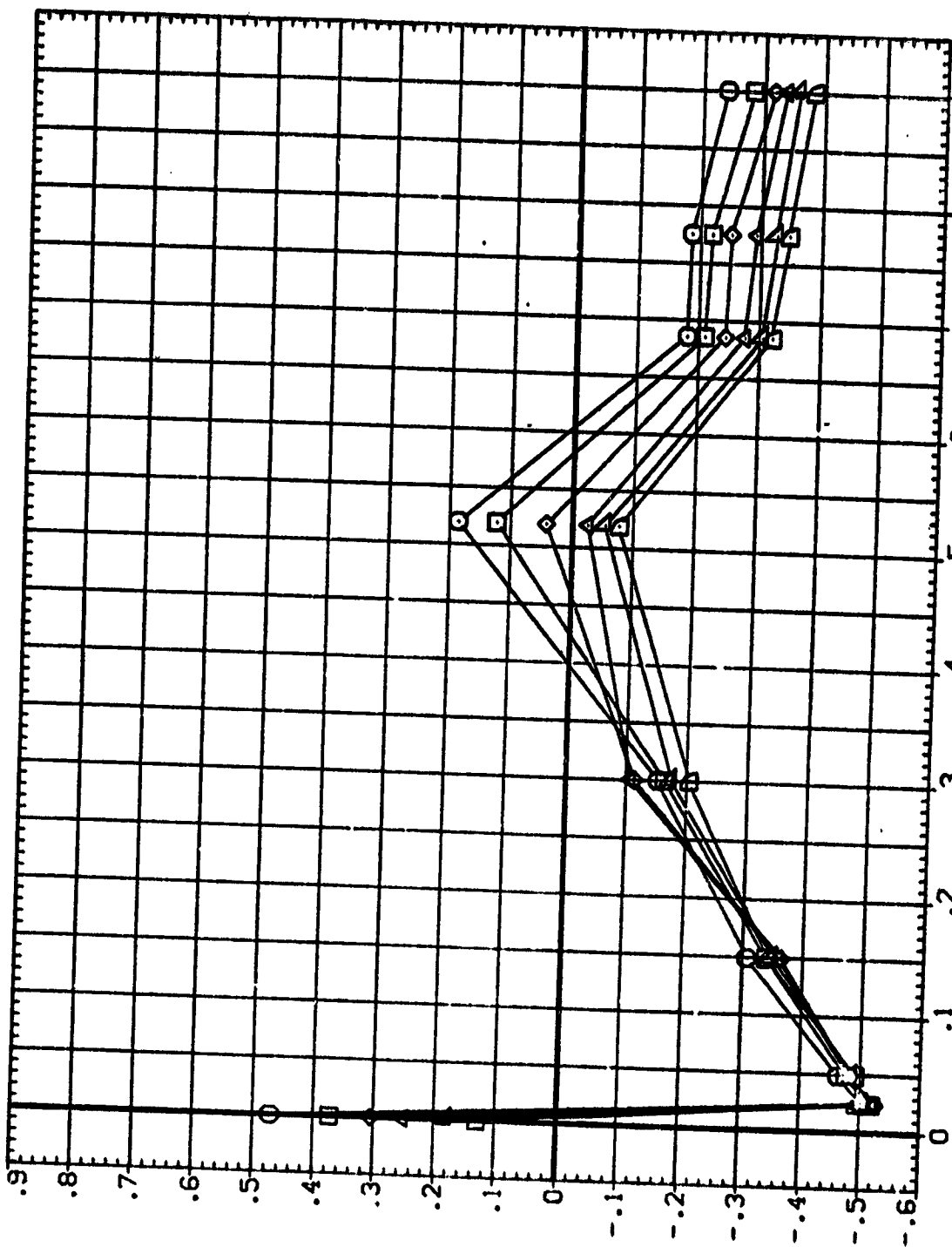


FIG. 14 VERTICAL TAIL SPEEDBRAKE DEFLECTION 35 DEGREES